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JUNE 21, 1967
TWENTY-FIVE CENTS

32: Hydrostatic
on IH's 656

39: Auction Prices

SHOP PERSONNEL:

- An acute shortage? Page 23
- Training program directory. Page 26





**Take the farmer. All he has to know is farming.
And marketing. And automation. And cost accounting.
He doesn't have to know much about Ramco Moly piston rings.**

Just this.

Once Ramco Moly rings are installed, he can forget them.

Because we make them with molybdenum, the metal that doesn't scuff at operating temperatures.

So they seat almost instantly.

Use less oil. Are completely reliable in tractors or trucks, gas or diesel. And cars, of course.

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D-76



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IMPLEMENT & TRACTOR

The Business Magazine of the Farm and Industrial Equipment Industry

in this issue...

21 Editorial: Some Insights on Service Needs.

23 Is There a Crisis in Manning Our Shops?

A new I&T survey of service shop personnel: Why do they quit, why are they fired, how old are they . . . is there a real shortage?



26 Where They're Training Mechanics.

A coast-to-coast look at the schools, the students, and their postgraduation prospects—plus a new directory.

32 IH Introduces a Hydrostatic Transmission Farm Tractor.

The 656 hydrostatic tractor has single lever control of high-range speeds from 20 mph forward to 9 mph in reverse.



34 Equipment Needs and the Importance of Specifications.

IEMC members hear praise and pleas for new, improved equipment and data from professional equipment buyers.



36 Putting Tractor Repair Costs in Perspective.

Diesel vs gasoline tractor costs, repairs, upkeep and depreciation . . . more from Prof. Jay Weber's 7-year tractor study.

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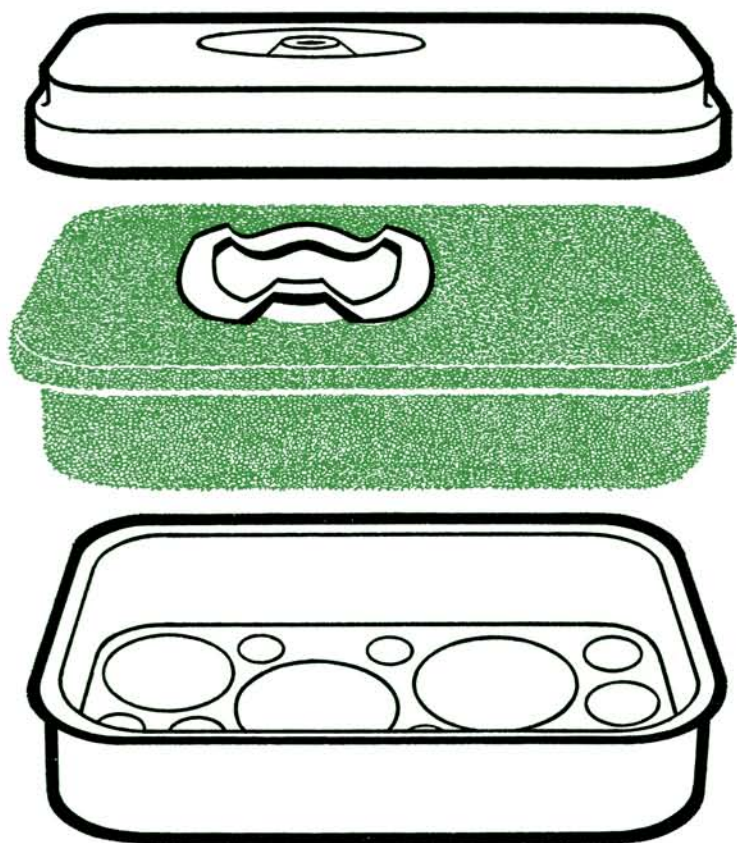
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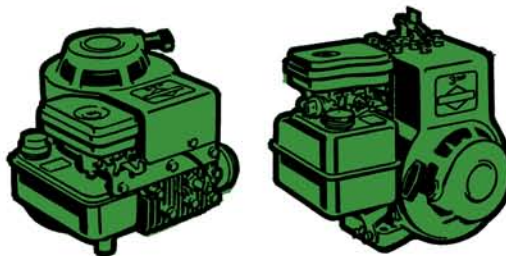


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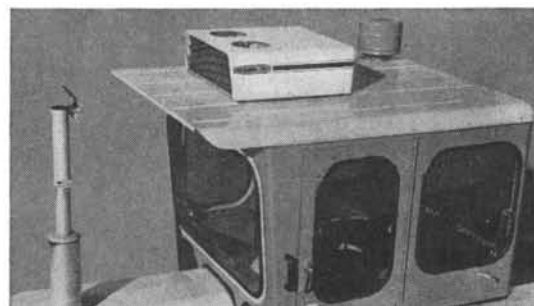


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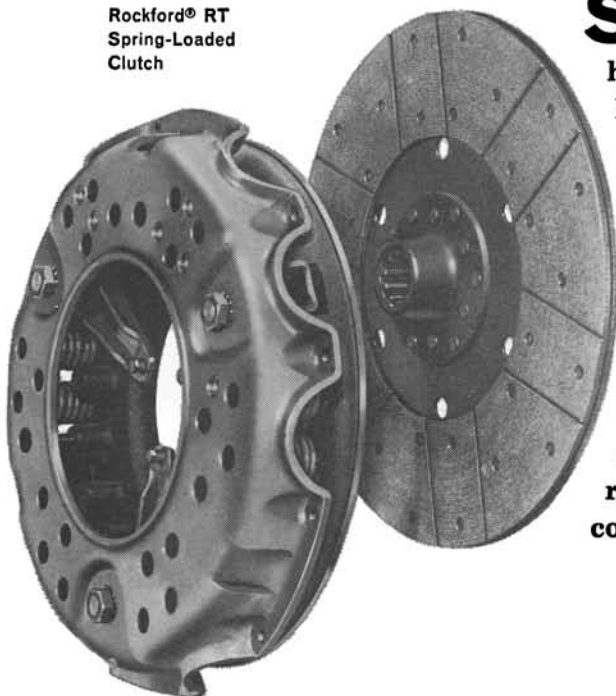


FOR ENGINE PRODUCTS YOU CAN TRUST, LOOK TO FEDERAL-MOGUL: ENGINE BEARINGS • PISTONS • SLEEVE ASSEMBLIES • VALVES • VALVE PARTS
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IT'S GOT the ability to harness horsepower into work capacity that counts. This CASE 930 Comfort King Tractor steps up farm production... handles more acres per day.

Rockford® RT
Spring-Loaded
Clutch



STAMINA An important link in the heavy-duty power train is the Rockford® 15" RT Spring-Loaded clutch. The steel cover plate provides maximum rigidity... is specially designed to dissipate heat and dust.

SMOOTH ACTION Driving and driven members are vibration-free assuring smooth, faster gear engagement. Rockford clutches are available in a wide range of torque capacities for agricultural applications. Call us for recommendations on your next power control requirement.

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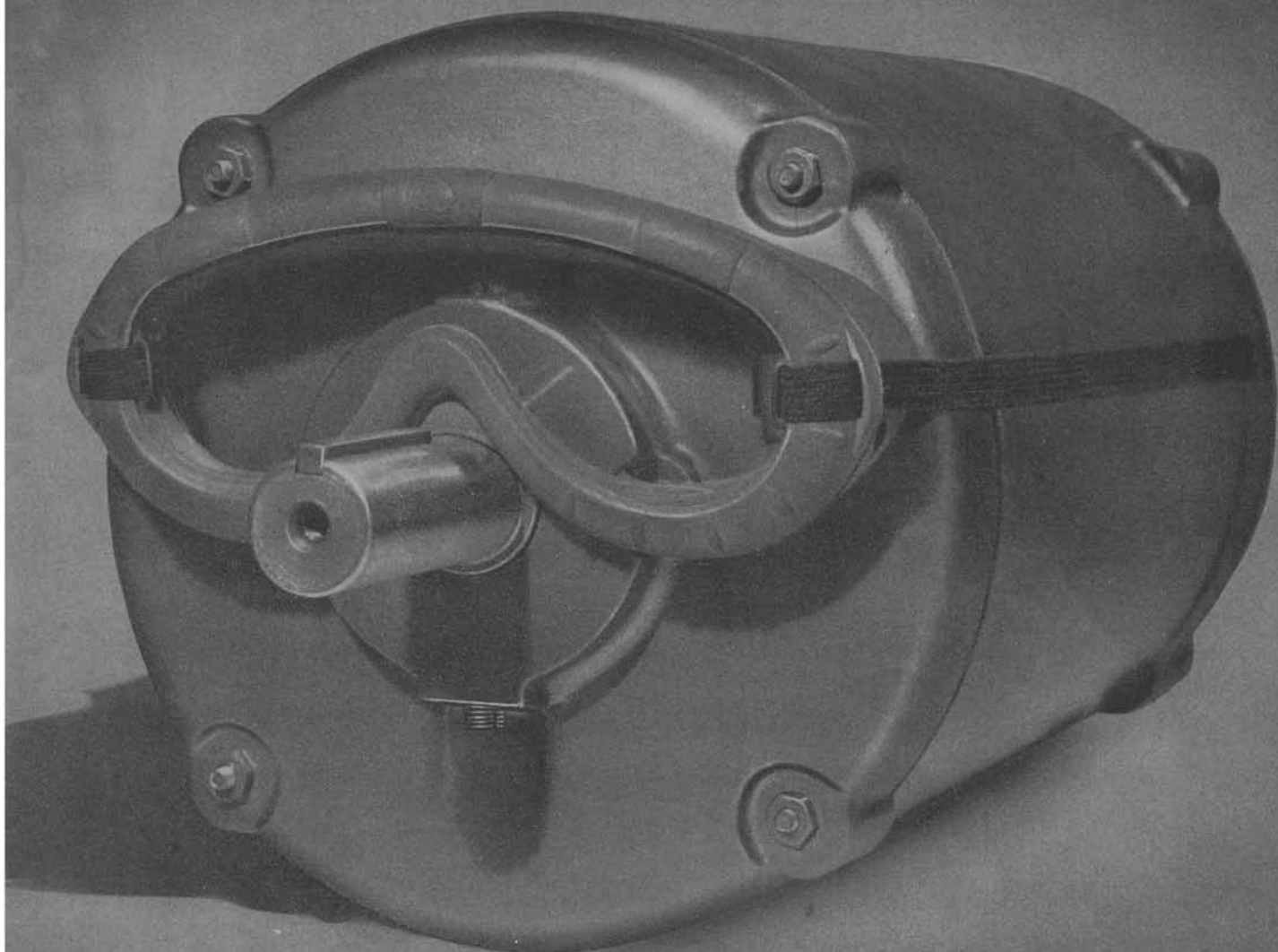
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**farm equipment
products**



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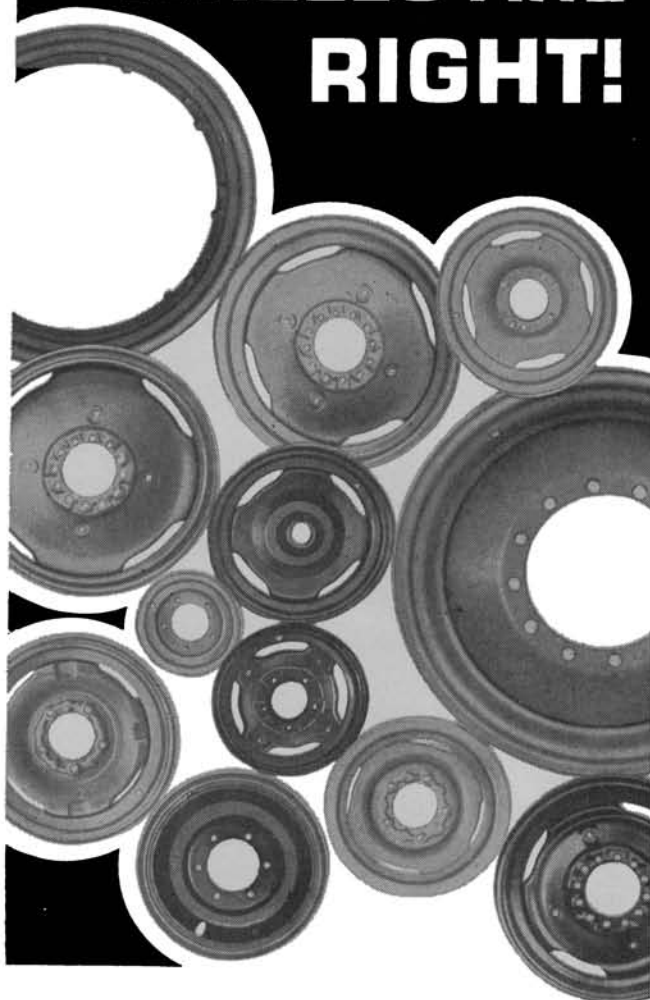
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IMPLEMENT & TRACTOR



Power, stability and operating ease are important features of the all-new IH Model 315 Combine.

Why Gates PowerBand Belts were chosen for the all-new **IH** Model 315 and the new Model 205 Combines

"In designing our new combines, we went all out for reliability," an International Harvester engineer says. "Every part was designed to give long, trouble-free service. This design requirement led us to Gates PowerBand Belts for the drive."

With PowerBand, International Harvester gives their customers all the advantages and reliability of multiple V-belts—and more. Gates PowerBand Belts have unusual lateral stability. They are made by joining two or more standard Gates V-belts permanently together with a tie-band. The

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International Harvester and many other leading agricultural equipment manufacturers have proved for themselves that Gates PowerBand Belts are the answer to belt stability problems. Put them on your drives and see how smoothly they run. Call your nearby Gates Field Engineer for design aid and data—or write: 999 South Broadway, Denver, Colorado 80217.

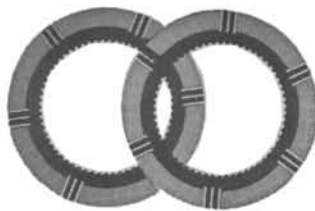
The Gates Rubber Company 

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BP708



It takes four pieces of paper to drive this metro transit bus.



Paper?

No kidding.

The automatic transmission in a metro transit bus uses just two 15" diameter clutch discs to transmit the 675. lb./ft. of torque available for acceleration.

Each side of each driving disc has a specially-designed paper friction surface, designed to run in an oil bath. This paper provides the "bite" necessary to get the bus moving . . . and keep it moving.

Borg-Warner is not only the prime supplier for clutch

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We have designed, and manufactured, clutch discs from 2" to 20" in diameter and for torque loads from 20 lb./in. to 1000 lb./ft. Design what you wish . . . and leave the clutch discs to us!

Write today for full technical information.

SPRING DIVISION

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Bellwood, Illinois

**industrial
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COOL IT!

We roll every size every 48 hours

Your order never has to wait on the sidelines at Interlake. Every width, every gauge, is rolled at least three times a week. That includes the steel *you* want, no matter what the specifications.

Same thing with grades of steel. We cook up forty heats of steel every day in 75 ton Basic Oxygen and 80 ton electric Furnaces. Your order can easily be worked in.

This is the kind of service that has made us the *nation's most flexible producer of steel*.

Have a hot steel order? Stay cool. Interlake will bend over backwards. But then we're flexible.

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STEEL CORPORATION

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Spicer® ag-master doubles the guard



Spicer protects with both torque-limiting and over-running clutches in one unit.

That's right! This great new Spicer development is like two clutches in one. What's more, this combination torque-limiting and over-running clutch is available with torque ratings up to 900 lbs. ft. The clutch is pre-set to your torque specifications at the factory. It is completely encased to prevent operator from changing the setting to one which could result in an overloaded condition.

This is an example of the fresh new approach Dana is applying to the agricultural implement field. We can back up our ideas with over sixty years' experience developing and producing driveshafts for all types of vehicles. So if you've an implement design problem, let us help. For complete information, or assistance, write: Dana Corp., Dept. 86, Toledo, Ohio 43601.

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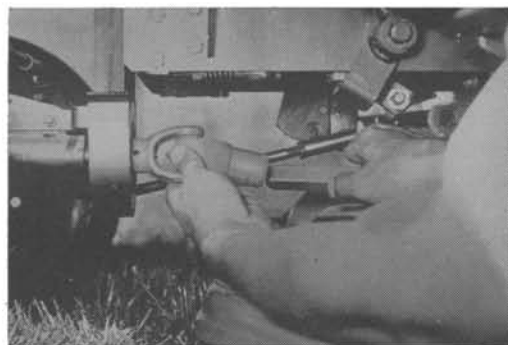


DANA CORPORATION

TOLEDO, OHIO 43601

husky as husky can get!

[One reason why Bolens outdoor power equipment
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**Better Drive Lines and
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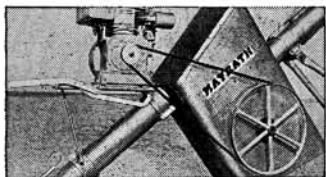
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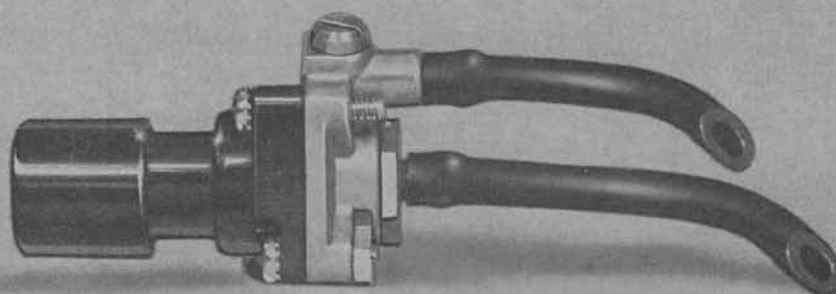
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SAWS**
Galesburg, Illinois

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1 Place coupling shell* in vise. Screw hose counterclockwise 'til it bottoms in shell. Back off 1/4 turn.



2 Insert stem in vise and push and turn shell and hose clockwise 'til large threads engage.



3 Put shell in vise. Continue turning stem 'til completed assembly looks like this.

*Duloc® non-skive illustrated.

QUICK, SAFE repair of hydraulic hose lines!

The leading makers of automotive, construction, industrial and agricultural machinery equip their products with ANCHOR Hose Assemblies and related fittings for dependable hydraulic power transmission.

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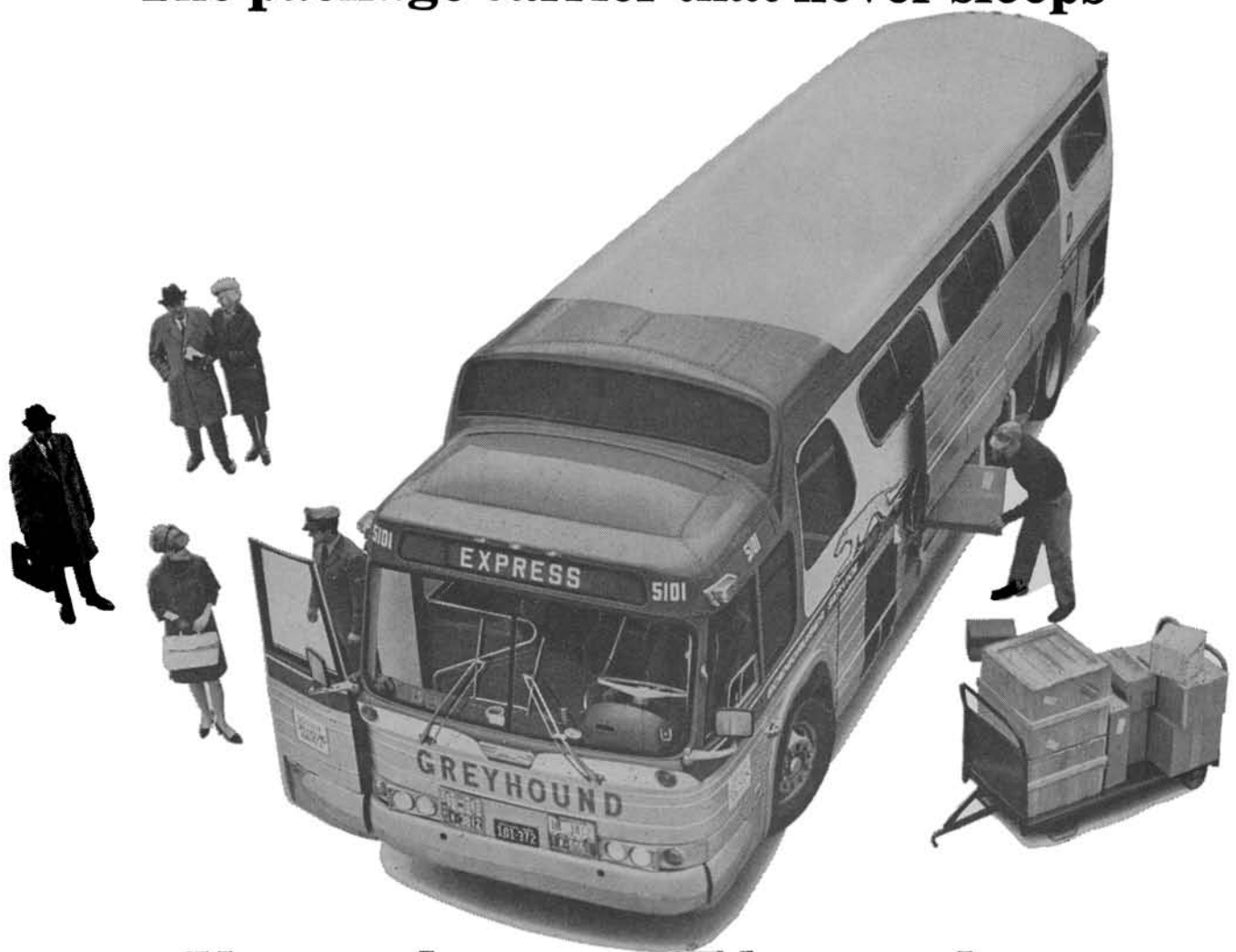
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It's there in hours and costs you less

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OMAHA— CHEYENNE	5	10 hrs. 30 min.	2.90	3.50	4.15
SEATTLE— SPOKANE	6	6 hrs. 20 min.	2.10	2.40	2.70
WINSTON-SALEM— RICHMOND, VA.	10	4 hrs. 30 min.	2.20	2.60	2.90

*Other low rates up to 100 lbs. Lot shipments, too.



One of a series of messages depicting another growing service of The Greyhound Corporation.

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Since 1897, WICO has been a highly successful producer of dependable small engine ignition systems. WICO has over 60 convenient central warehouse distributor locations throughout the United States and Canada to serve you. In addition, replacement ignition components and batteries are interchangeable with original equipment parts on all major two and four cycle engines up to 10 H.P.

Over 70% of all overhaul and repair jobs on small gasoline engines involve ignition part replacement. To help you get your share of this big business, WICO has set up a huge network of warehouse distributors with full stocks of top quality WICO batteries, coils, condensers, con-

tacts, magnetos and other parts. Now, it's more profitable for you to do business with a "one source" supplier like WICO.

WICO service reduces your handling costs to a minimum, eliminates unnecessary paper work, speeds up delivery of regular and rush items directly from stock.

Consider the convenience of WICO's new Red Box Line packaging, consider WICO's reputation for dependability, consider how far ahead you are with an item like WICO's "SPINIT", 12 volt battery ... small in size, large in capacity.

CONSIDER WICO!

For details, write Dept. IT

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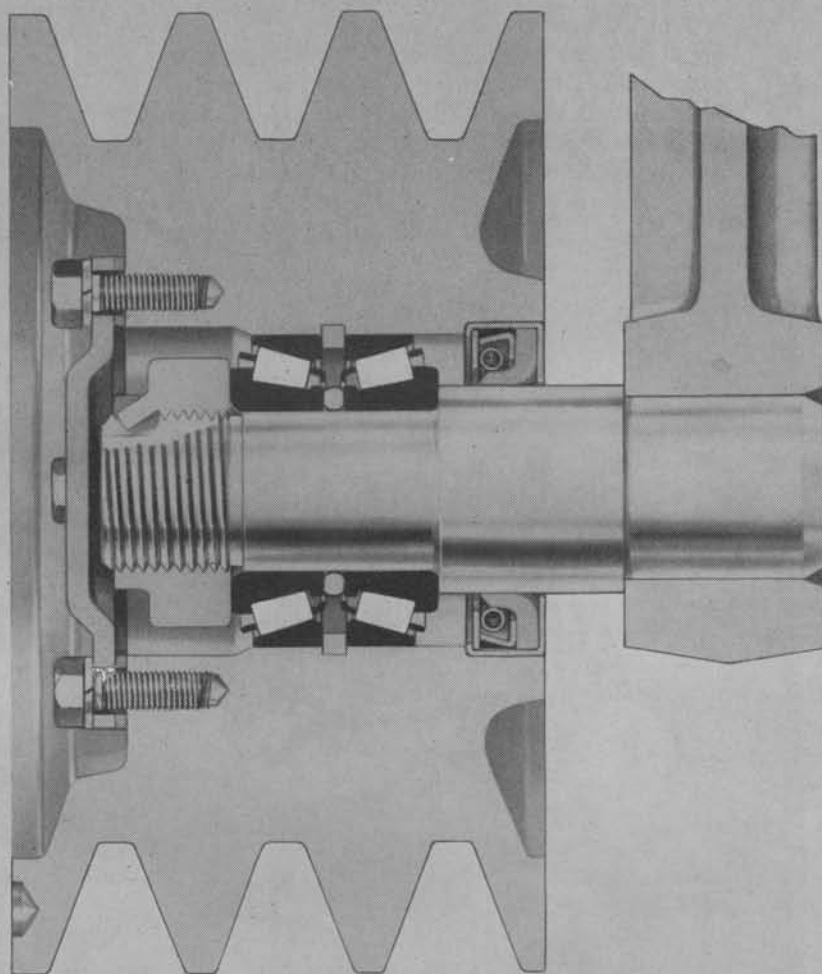


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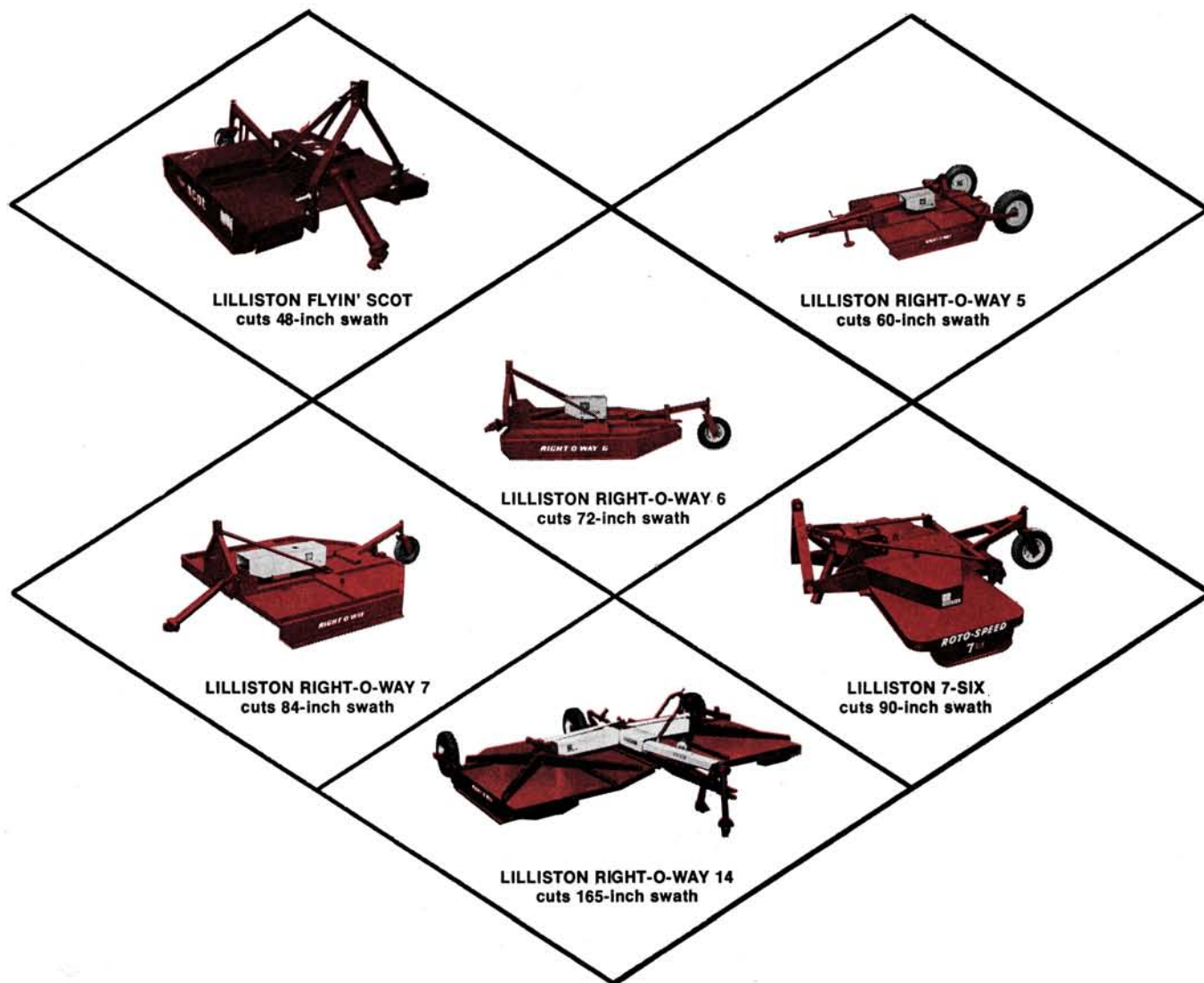
Where do you use the SS bearing assembly? In idler pulleys as diagrammed above. Or in drive gears,

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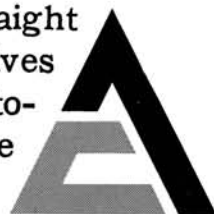
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Traction Booster is an Allis-Chalmers trademark.

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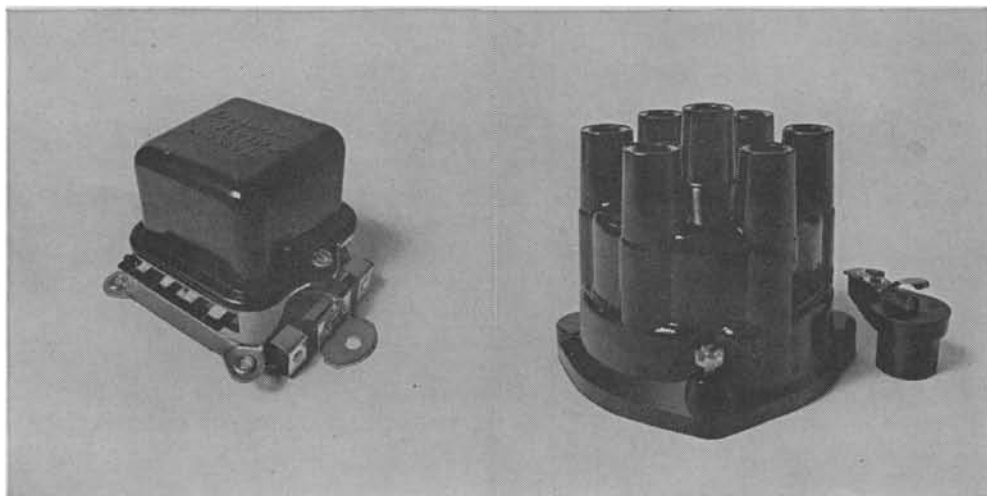
Room with a view. A roomy platform with instruments straight ahead, and controls handy to the right. A sloping hood that gives a clear view of the work area. A Traction Booster that automatically transfers weight on 3-point hitch and pull type implements. Operator ease! That's why Allis-Chalmers dealers sell machine-performance and man-performance.



ALLIS-CHALMERS

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The forgettables.



Delco Remy regulators, distributor caps and rotors. You put them in. You forget them.

Our regulators are sealed to keep out water, oil, and harmful vapors. Welded electrical connections, plus maintenance-free precious metal contacts and shock-resistant mountings add ruggedness and long life.

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They're available through leading farm equipment dealers and from United Delco.

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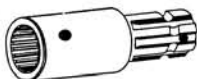
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FARM EQUIPMENT PRODUCTS

HUB CITY



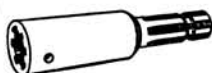
No. T352
Universal Sleeve Adaptor



No. T373
Involute Adaptor



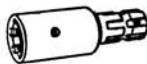
No. T353F
Universal Extension Adaptor



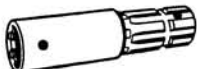
No. R400
Universal Reducer



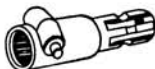
No. T355
Sleeve Adaptor, IHC CUB



No. R420
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No. T371
P.T.O. Extension



No. XB373
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● You make more money *and* you get faster turnover when you stock and sell guaranteed high quality Hub City adaptors, reducers, couplers, shafts, drive line assemblies and other related products. A wide range of units gives your customer greater selection. Proven job-performance gives farmers genuine satisfaction and you repeat business! Attractive dealer displays and merchandising helps available.

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**and so are yours,
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you save on gas, oil and tire wear. What's more, when weather conditions are bad, you can re-route your drivers right away. Why Motorola 2-way radio? Because it has been proved by thousands of users, many of them with businesses just like yours. Find out how Motorola radio can benefit and speed-up your operation. Call in your local Motorola Man. Or write for more information today. Dept. AIT-725 Motorola Communications and Electronics Inc., 4501 Augusta Blvd., Chicago, Illinois 60651. A Subsidiary of Motorola Inc.

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Serving the Farm
and Industrial
Equipment Industry

Some Insights on Service Needs

■ OUR LATEST survey of service shop operations raises some fundamental questions and quiets some needless fears.

Despite the alarms about the rate of loss in shop help, the data show a net gain in the service labor force! Despite losing mechanics to other industries, we seem to pick up from other industries about as many as we lose to them. The data on losses and gains in the service labor force suggest the total industry picture is not as bleak as it is frequently painted.

Happily, the fear of an "over-age" service labor force is unfounded. The age distribution of mechanics looks as "normal" as you can imagine any work force age distribution. Only a fourth of the total number of mechanics presently employed is in the age group suggesting imminent retirement. Half the labor force is in the most experienced, most productive age group. So, from the age standpoint we don't seem to have a serious personnel problem.

A basic question was raised as I reviewed the data. Just about every dealer you meet today says he could use more mechanics in his shop. But, he does not discuss the exact purpose of his recruiting efforts. What per cent of service personnel recruited is to replace retirees? What per cent is to offset normal quits and firings? What per cent is to enlarge the labor force?

We sadly lack precise information regarding the quantitative aspects of service in the future. Will the type of service jobs performed in the future be as demanding of man-hours as in the recent past? Can more service jobs be turned out in the future without increasing man-hours? We hear more about the qualitative aspects of future service requirements such as skill level and education. But, I have not seen any studies of the quantity of man-hours that will be required to service farmers' operating machinery and "keep 'em rolling". How then, can we discuss intelligently service personnel needs?

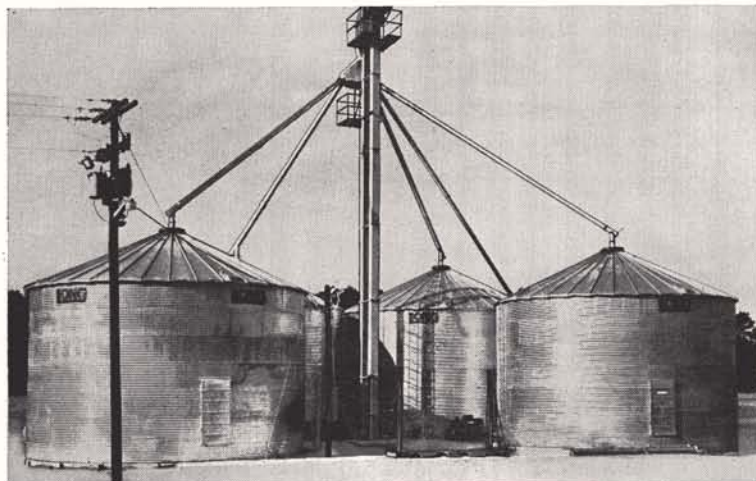
One signal that does alarm me is the comparatively small per cent of recruits coming from technical and vocational schools. The majority of new employees come from other dealers and from other industries. This statistic suggests a great "churn" or turnover. It also suggests the majority of recruits must be for replacement of experienced help. What about "in service" training programs? What about apprenticeship programs? Why is not a significantly larger per cent of new employees being recruited from trade schools, technical institutes, vo-ag programs? Do we lack attractants? Or, do we really believe what we say about the increasing sophistication of machinery and the heightening in the level of competence it will take to service and maintain farm equipment? □

Geo. H. Seferovich
EDITOR

LONG

Equipment Helps You Make Extra Sales & Extra Profit

Long farm equipment has the built-in quality that helps move equipment faster. Your customers see, like and BUY the exclusive design features, the rugged construction and the attractive price tag. Even with the "extras" you'll find Long priced to compete.

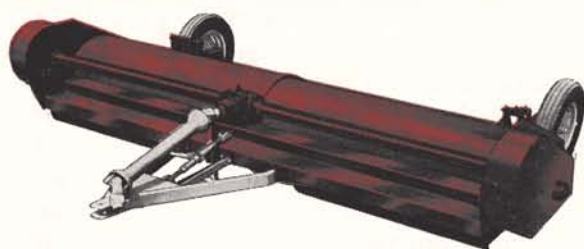


GRAIN EQUIPMENT A full line of grain bins from 1,000 to 100,000 bushels with bin unloaders that eliminate cords and motors inside the bin. Long Super 6" and 8" Augers with pivoting tandem wheels and free floating hex line shaft that never binds. Full line of high quality drying fans and heaters, leg elevators, screw conveyor, continuous flow grain drier from 250 to 1,200 bu. per hour capacity. Features not found on others to help you meet and beat competition!



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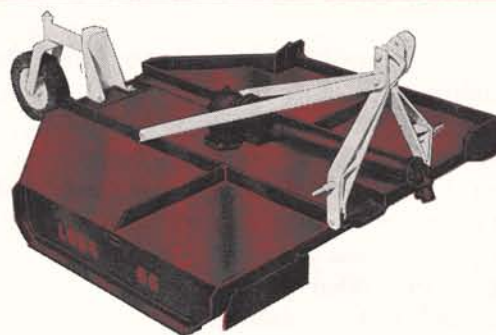
Clean, rugged looks that appeal to your customers. Full range with six basic frames (17 models) from 5'6" medium duty for light tractors to 20'8" heavy duty tandem models. Good discounts and terms. 75% parts inter-changeable on all models for low parts inventory.



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NOW EXTRA HEAVY DUTY 100 HP GEAR BOX

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A good money-maker! — The Long "48", the Long "60" and the Long "66" with a full range of accessories for any application. Extra heavy duty gear box. Extra heavy duty all-steel frame. Priced competitively!

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For More Details Circle (25) on Reply Card

Answers to this survey tell: why mechanics quit dealers, why dealers fired mechanics, about the age factor in shops, about where new employees come from, about personnel needs. And some fresh questions are raised.

■ IF IT'S TRUE that the best asset any business has is its people, and if what so many successful dealers say is true—that their service departments are their strongest competitive feature—it's time we take a fresh look at the personnel situation in farm equipment shops.

There's also this reason:

In recent years, the cry of "mechanic shortage" has been sounded regularly around the industry. But just what are the dimensions and features of this shortage—or is it really there?

I&T has completed a survey of farm equipment dealerships that explores, among other things, several aspects of the manpower situation in service shops.

As any survey should do, it casts some light on several pre-

viously unexplored matters—and it sets up some new questions. Here's a summary of what the survey told us—and what it made us wonder:

1. Hirings exceeded firings and discontinuances by 27 per cent, indicating a net gain in the service labor force.
2. Higher wages and more attractive industries account for nearly half the resignations of service help.
3. Two-thirds of the mechanics fired, according to dealers, lacked ability or were not sufficiently productive.
4. Schools and the military services provide the source of a little more than one-fifth of new service employees. Thirty-one per cent come from other dealerships.
5. Other industries provide a la-

bor source for 29 per cent of dealers, but attract mechanics away from 21 per cent of dealers.

6. Age distribution of mechanics appears normal, biased neither to unseasoned youth, nor to super-annuated fogies.

7. But 25 per cent of the labor force in June 1967, was 51 years of age or older. Replacing men lost through age factors alone will require a certain portion of the recruits if the service labor force is to remain stable.

8. Thus, the question of the number of new employees needed: (a) to replace normal turnover (resignations and firings), (b) to replace retirements, disabilities and deaths, and (c) for expansion, is not answered definitively. It raises several valid questions of definition and interpretation.

More . . .

An I&T report
on service
personnel:

IS THERE A CRISIS IN MANNING OUR SHOPS?

By Gerald G. Shirel

June 21, 1967



Service Shop Employee Turnover

Why do they quit?

If you lost a good mechanic in the past 2½ years, the odds are 2 to 1 he went to another industry (automotive, manufacturing, etc.) or to a competitor for higher wages and fringe benefits. Forty-six per cent of dealers' servicemen who resigned between January 1965 and June 1967 gave their bosses one of these two reasons as the motive for quitting.

Resigned Because:	Resignations (per cent)
Wages (wanted more money)	25
Other Industries (more attractive)	21
Personal	9
Military service	9
Health	8
Geographical location	7
Retirement	6
Hours/shift	5
Federal/state civil service	4
Additional education (returned to school)	2
Working conditions (undesirable)	2
(Death)	2
Total	100

Why are they fired?

Lack of ability was the most frequent reason for dismissal. Our study revealed 45 per cent of the men fired were in this category. This indicates that while the servicing dealer is faced with mechanic replacement problems, he realizes the damage one incompetent mechanic can do to his service reputation. "Non-productive" and "unreliable" were ranked second and third as causes for employee discharge.

If two-thirds of employees were discharged for **lack of ability** (though trainable), and **non-productive** (though capable), the question is raised concerning adequacy of shop supervision, training and motivation.

Reason for Discharge	Firings (per cent)
Lack of ability	45
Non-productive	21
Unreliable	17
Social traits	13
Untrainable	4
Total	100

How old are your mechanics?

The age factor of the skilled service force is probably overlooked by most dealers. Yet, how well can a dealer provide for expansion of his service operation if 25 per cent of his present work force will, before too long, have to be replaced due to retirement and other age factors?

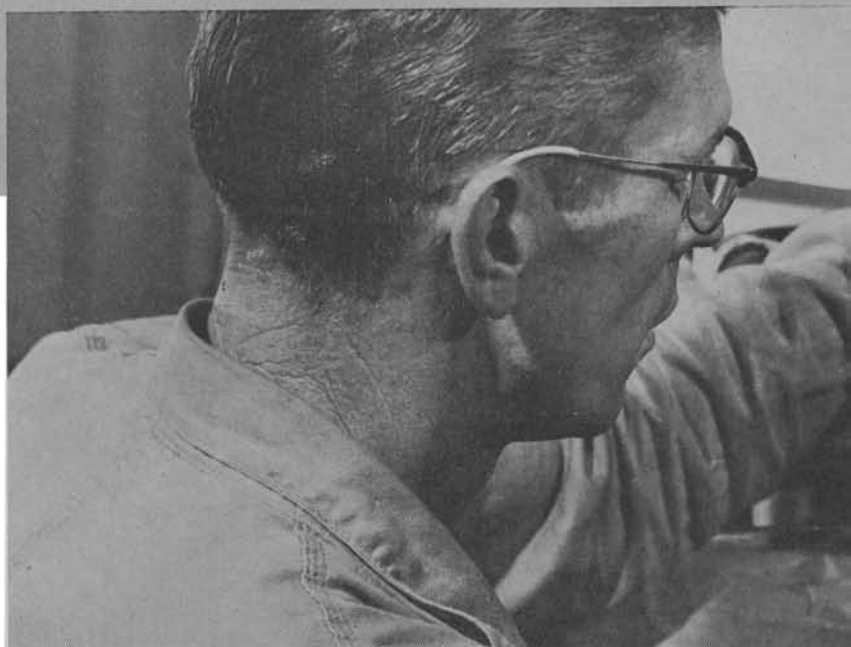
Today, one-fourth of farm equipment dealers' present service manpower is under 31 years old; the median age is 40 years. One-half of the skilled labor force is in the 31 to 50 group, considered the most productive age group. The remaining 25 per cent are over 51 years of age.

Age Bracket	Mechanics (per cent)
19-25	12
26-30	13
31-35	14
36-40	12
(Median Age, 40)	
41-45	13
46-50	13
51-55	10
56-60	7
60 & Over	6

All farm equipment mechanics 100

SHOP PERSONNEL CRISIS?

(continued)



Where do the replacements come from?

Three in ten mechanics hired between January 1965 and June 1967 came from other dealerships. This may be an indication you stand a good chance of being "raided" unless your wage scale and working conditions are competitive. Of course, not all mechanics from other dealerships were enticed by additional compensation or fringe benefits. Some were forced to find new jobs because of dealerships consolidating or closing their doors.

Another significant finding: The number of shopmen hired exceeded the number fired or quit by 27 per cent. This can be considered a healthy sign of expansion—but it raised the matter of the frequently reported shortage of skilled labor: Are dealers thinking in terms of replacement needs or expansion, or both?

Source	New Shopmen (per cent)
Other dealerships	31
Other industries	29
Farm	19
High school	10
Trade schools	6
Military service	5
Total	100

Is there really a mechanic shortage?

Twenty per cent of servicing dealers reported they did not need additional help at this time. Thirty-nine per cent of the dealers responding stated they would hire one additional mechanic; thirty-four per cent would hire two additional mechanics if they could find them. The remaining seven per cent of the dealers reported they would hire three or more mechanics.

Number of Mechanics Needed	Dealers Responding (per cent)
None	20
One mechanic	39
Two mechanics	34
Three or more mechanics ...	7
Total dealers responding	100

The shortage: How severe?

The question of whether there is an industry-wide shortage of skilled service labor is not completely answered. Eighty per cent of responding dealers claim they would hire one or more mechanics immediately.

Yet, it is not clear whether the additional manpower sought would be for replacement or additions to the labor force for expanded service operations.

It also is not clear whether there is a potential labor pool that could be tapped by improved personnel policies and programs, such as:

- Compensating skilled service help at rates equal to those of competitive industries (motivation and retention).
- Providing in-shop training for those men who lack the knowledge but are willing and trainable (training).
- Maintaining adequate tooling, facilities and supervision to improve the shop's productivity (efficiency).

But, if dealers continue to hire 27 per cent more service help than they lose through "quits" and "firings," as this study indicated, the frequently cited mechanic shortage may not be as acute as many in this industry claim.

Another question that hasn't yet been answered and that relates to service personnel requirements: Will the quantity of the farm equipment service responsibility be substantially different in coming years, and will this responsibility be met in essentially the same way it is today? □



WHERE THEY'RE TRAINING MECHANICS

Here's a roundup of farm equipment

By Bill Fogarty

■ **DOES A GLANCE** at this list of training programs give you a feeling of comfort about where your next serviceman is coming from?

If it does, turn back to the preceding article. You'll see that dealers

responding to I&T's survey said that 6 per cent of the men they hired in the past 18 months came from trade schools—and 31 per cent came from other dealerships.

Nevertheless, there are more schools and school-related programs

providing basic farm equipment service training than ever before. The reasons are simple:

1. Demand. As the same survey reports, 80 per cent of dealers responding would hire at least one more mechanic now if they could.

Training Programs for Farm Equipment Mechanics, Partsmen

School	Title of Program	Length	Number Enrolled	Recent or Next Graduation	School	Title of Program	Length	Number Enrolled	Recent or Next Graduation
Arizona Eastern Arizona College Thatcher, Eldon Angle, Instructor	Agriculture mechanics technology	4 semesters	5	5-30-67 1-30-68	Idaho College of Southern Idaho Area Vocational- Technical School, 1300 Kimberly Rd., Twin Falls, 83301, G. Meyer- hoeffer, Counselor	Agri-equip- ment Tech- nology*	52 weeks	15	4-5-68 5-9-69
California Bakersfield College, Bakersfield 93305, Edwin Tirschbirck, Instructor	Farm machinery	1 semester	14	5-12-67 5-12-68	Illinois Canton Community Col- lege, 102 E. Elm St., Canton 61520, Edwin Fitzgibbon, Dean of Technical Education	Farm machine technology	2 years	78	6-5-67 6-4-68
Madera County Automotive JA & TC, Madera 93637	Auto-farm equipment mechanic*	4 weeks	Four weeks MDTA training followed by 48 weeks on- the-job training. Last MDTA com- pleted 12-66.		Danville Junior College, 2000 E. Main St., Dan- ville, James F. Nickell, Supervisor, Ag. Education	Agriculture mechanics	4 semesters, 1 summer	24	6-15-68 6-15-69
San Joaquin Delta Col- lege, Stockton 95204, James Beardsley, Ag. Mechanics Teacher	Agriculture mechanics	2 semesters	2	6-16-67 6-16-68	Greer Tech. Institute, Box 368, Braidwood 60408, Al Barra, Asst. Director	Construction equipment mechanics	13½ weeks	123	7-6-67 8-2-67
Modesto Junior College, Modesto, Ernest Tarone, Head, Dept. of Agriculture	Agriculture engineering Fluid power technician	4 semesters 4 semesters			Taylorville (see L. M. Alger, Farm Placement & Clearance, 165 N. Canal, Chicago)	Farm equip- ment me- chanic*	9½ mos.	15	8-17-67
Colorado Akron, Longmont, Greeley, Glenwood Springs, William J. Dougherty, MDTA Coordi- nator, Colorado Dept. of Employment, Denver	Farm equip- ment me- chanic, Trac- tor mechanic, machinery mechanic*	8,000 hours on-the-job training with dealers.			Quincy Tech. Schools, Quincy, W. H. Tossick, Vice-President, Gen. Mgr.	Diesel, auto mechanics (diesel engines, tractors)	9 mos.	55	6-12-67 9-10-67
Delaware S. Hallock duPont School of Applied Ag. Science, U. of Delaware, Newark, Ralph P. Barwick	Agricultural mechanization	4 semesters			Wabash Valley College, Mt. Carmel 62863, Dwight Mobley, Coordinator	Agricultural mechanics	7 quarters	42	6-2-67
Georgia Abraham Baldwin Ag. College, Tifton, J. G. Chambliss, Prof. of Ag. Engr.	Agricultural equipment technology	6 quarters	76	5-3-67 6-4-68	Iowa North Iowa Area Com- munity College, 220 E. State St., Mason City 50401, Roger Holcomb, Agri. Coordinator	Ag. & light industrial equipment technology	5 semesters	14	6-68 6-69
South Georgia Technical & Vocational School, P.O. Box 560, Americus, 31709, James E. Spradlin	Farm ma- chinery mechanics	1224 hours	6	5-9-67 5-6-68					

mechanic training courses now under way or getting started.

It isn't surprising, therefore, that many of the programs listed in this directory have been organized and planned by educators at the request of and in cooperation with regional dealer associations.

2. Federal Funds. The Manpower

Development and Training Act of 1962 (MDTA) has been the source of money for starting many farm equipment mechanic programs from scratch. It has also permitted several states' vocational training institutions to expand their activities in this area.

MDTA, of course, is not the only channel by which Federal money has been supporting farm equipment mechanic training, but it has been most prominent.

More . . .

School	Title of Program	Length	Number Enrolled	Recent or Next Graduation	School	Title of Program	Length	Number Enrolled	Recent or Next Graduation
Kansas Dodge City Community Junior College, Dodge City 67801, Howard N. Acott, Director, Ag. Technology	Ag. machinery service occupations	4 semesters	6	5-68 5-69	Michigan (continued) Montcalm Community College, Sidney 48885, Maurice D. Swift, Dean, Technical-Vocational Studies	Power equipment specialist	4 semesters	Start fall 1967	5-25-69
North Central Kansas Area Vocational-Technical School, Box 626, Beloit 67420, Earl Baugher, Instructor	Farm equipment mechanics	2 semesters	19	5-24-67 5-68	Minnesota Alexandria Area Tech. School, Alexandria, 56308, Vernon R. Maack, Director	Farm equipment mechanics Partsmen	20 mos. 10 mos.	20	5-5-67
Northwest Kansas Area Vocational-Technical School, Goodland, 67735, Larry Keirns, Director	Farm mechanics	2160 clock hours	37	5-26-67 5-24-68	Austin Area Vocational-Tech. School, Austin 55912, Phil Johnson, Coordinator	Farm equipment mechanics	2000 clock hours	30	4-30-68
Kentucky Eastern Kentucky U., Richmond 40475, Dr. Glenn W. Hayes, Asst. Professor	Agricultural mechanization	4 semesters	11	6-1-68 6-1-69	Canby Area Vocational-Tech. School, Canby 56220, Dewain Englund, Director	Farm equipment service and sales*	20 mos.	58 (20 MDTA)	5-19-67 5-17-68
Louisiana Bastrop (contact T. J. Ray, Chief, Farm Labor Service, Baton Rouge)	Farm equipment mechanic	12 mos.	20	1-26-68	Granite Falls Area Vocational Tech. School, Granite Falls, Reuben A. Berg, Manager, Montevideo Office of Employment Security, Montevideo	Fluid power mechanics*	800 clock hours	20	6-23-67
Massachusetts Norfolk County Ag. School, 460 Main St., Walpole 02081, Charles Howard, Ag. Mechanics Dept.	Agricultural mechanics	2 semesters	5	9-1-67 9-1-68	Staples Area Vocational-Tech. School, Staples, 56479, Elmer Mickelsen, Instructor	Farm equipment mechanics	18 mos.	37	5-26-67 5-68
Essex County Ag. & Tech. Institute, Hathorne, James F. Gallant, Director	Tractor mechanic*	6 mos.	20	6-17-67	U. of Minnesota Tech. Institute, Crookston 56716, E. C. Miller, Head, Ag. Engr. Technologists Program	Agricultural engineering technician	6 quarters	16	6-68 6-69
Michigan MDTA Farm Equipment Mechanic School, 1800 Columbus Ave., Bay City, Edmund Morelli, Director, Vocational Education	Farm equipment mechanic*	48 weeks	27	7-28-67	Mississippi Coahoma Junior College Clarksdale 38614, W. G. Taylor, Clarksdale Employment Service Supervisor	Farm equipment mechanic*	52 weeks	20	4-15-68 4-11-69
Michigan State U. Institute of Ag. Technology, 120 Ag. Hall, East Lansing 48823, Dr. Richard Bittner, Coordinator	Farm equipment service & sales	6 terms		3-18-68 3-17-69	Hinds Junior College, Raymond, Jack Treloar Jr., Head, Ag. Dept.	Agriculture mechanics	To start fall, 1967		

Will the programs offered in this directory be continued, whether private or supported by state or U.S. funds? And will there be more starting up?

This depends on many things—not the least of which are the war in Viet Nam and the draft. Much also depends on Congress and its interest in providing money for the programs it now supports.

It depends on how strongly dealer groups push for training programs and on how attractive dealers make their job openings, both individually and collectively. Educators who advise young people about vocations have to be convinced.

It is also believed that more training programs would be in operation right now if there were qualified instructors available.

Is this directory complete?

Probably not, although we have tried. We know, for example, that some dealers get mechanics from private trade schools which don't have farm equipment service courses as such but who turn out men well-trained in engine basics, diesel, welding, etc.

And it's difficult to pinpoint exactly what MDTA courses are operating.

(Continued on page 54)

Training Programs (continued)

School	Title of Program	Length	Number Enrolled	Recent or Next Graduation	School	Title of Program	Length	Number Enrolled	Recent or Next Graduation
Mississippi (continued)					New York				
Northwest Junior College, Senatobia 38668, Arthur Royals, Grenada Employment Service Manager	Farm equipment mechanics*		40	11-67	State University of New York Ag. and Tech. Colleges: Alfred, Wayne Krontil, Head, Engineering Dept.	Agricultural engineering technology	4 semesters	60	6-67 6-68
Missouri					Canton, Francis J. Hall, Instructor	Agricultural engineering	3 semesters	40	6-11-67 6-68
Higginsville Public Schools, A. J. Loudin, Manager, Employment Service, Lexington	Farm equipment mechanic*	1680 clock hours	20	11-17-67	Cobleskill, E. B. Mott, Prof. of Ag. Engr. Technology	Agricultural engineering technology	4 semesters	50	6-17-67 6-68
Montana					Delhi, Wilbur Farnsworth, Chairman, Agriculture Div.	Agricultural engineering technology	4 semesters		6-11-67 6-68
Palmyra Public Schools, Thomas Howell, Manager, Employments Service, Hannibal	Farm equipment mechanic*	1880 clock hours	16	12-8-67 2-9-68	Morrisville, L. R. Crane, Chairman, Agriculture Div.	Agricultural engineering	4 semesters	33	6-4-67 1-30-68
Sikeston Public Schools, Leon Garnett, Manager, Employment Service, Sikeston	Power equipment mechanic*	1200 clock hours	25	12-20-67	North Carolina				
Nebraska					North Carolina State U. Raleigh, 27606, D. A. Miller, Director, Ag. Institute	Farm equipment sales and service	4 semesters	76	5-26-67 5-24-68
Helena Public Schools, Vocational-Tech. Division, Helena, William Korizek, Director	Farm machinery	4 semesters	35	6-2-67 6-7-68	Wilkes Community College, Wilkesboro 28691, Harold D. Simpson, Head, Ag. and Biological Education	Agricultural equipment technology	6 quarters	To start fall, 1967	
Nevada					Wilson County Tech. Institute, Wilson 27893, J. H. Respass, Jr., Instructor	Agricultural implements	6 quarters	11	5-68 5-69
Nebraska Vocational-Tech. School, Milford 68405, Lowell A. Welsh, Director	Hydraulics, diesel and farm tractor	6 quarters	102	6-14-67 9-27-67	North Dakota				
U. of Nebraska School of Tech. Ag., Curtis 69025, Gerald J. Huntwork	Ag. machinery mechanics	7 quarters	39	6-9-67 6-5-68	North Dakota State School of Science, Wahpeton 58075, W. M. Nordgaard	General mechanics	3 terms	62	
New Mexico						Diesel maintenance	6 quarters	46	5-2-67
U. of Nevada, College of Agriculture, Reno 89507, T. A. Butler, Assistant Professor	Agricultural mechanics	4 semesters	9	6-67 8-67		Farm equipment mechanics*	26 weeks	39	
Ag. Institute, New Mexico State U. University Park Branch, Las Cruces 88001, Ramsey M. Groves, Director	Agricultural machinery and equipment	5 semesters	8	5-68 5-69					



Barre Hunter, Gary Durst and Ron Bonfig are products of three mechanical training schools. Gary (center) took the automotive course at U.S. Trade Schools, Kansas City, but prefers the variety found in farm machinery work; Barre (l.) divides his time between the shop and Canton (Ill.) Community College on a work/study program; Ron Bonfig is finishing his diesel/automotive studies at Quincy (Ill.) Technical Schools. All are employed by Selby Impl. Co., Quincy.

School	Title of Program	Length	Number Enrolled	Recent or Next Graduation	School	Title of Program	Length	Number Enrolled	Recent or Next Graduation
Ohio Clark County Technical Institute, Springfield	Ag. mechanics 2 years (emphasis on sales and management)		50		Lexington, Employment Service Office, Lexington	Farm equipment mechanic*	6 mos.	20	6-24-67
Southern Ohio Manpower Training Center, Jackson, Clarence Gingerich, Director	Farm equipment mechanic*	37 weeks	20	8-25-67 5-10-68	Texas James Connally Tech. Institute, Waco 76705, L. D. Pettay Jr., Director Work Skills Development	Farm equipment mechanic*	37 weeks	18	7-7-67
Wooster City Board of Education, Wooster, Ralph R. Rohrer, Supervisor, Trade and Industrial Education	Farm equipment mechanic*	49 weeks	15	1-12-68 12-20-68	Washington Big Bend Community College, Moses Lake, John W. Rea, Manager, Employment Security, Moses Lake	Farm equipment mechanic*	45 weeks	30	10-20-67
Oklahoma Tonkawa (see M.C. Combs, Farm Placement, Will Rogers Bldg., Oklahoma City)	Tractor & implement repairman	6 mos.	20	6-14-67	Yakima Valley College, Yakima 98902, John W. Griffith, College Agricultural Officer	Farm equipment mechanic	2 years	12	6-7-68 6-7-69
Muskogee (contact Mr. Combs)	Tractor & implement repairman	6 mos.	20	5-26-67	Wisconsin Madison, Appleton, Beaver Dam, Eau Claire, Janesville Vocational Schools	On-the-job apprentice training program. Contact local office of Wisconsin State Employment Service, or Wisconsin Implement Dealers Assn. Part of training given at schools, balance at dealerships. MDTA support.			
Oregon Lane Community College, Eugene, 97402, Mel Gaskill, Chairman, Mechanics Div.	Farm equipment service	7 terms	18	6-68 6-69	Marathon County Tech. Institute, Wausau 54401, James Zepplin, Ag. Mechanics Supervisor	Agricultural equipment and power mechanics	4 semesters	25	6-4-67
Treasure Valley Community College, Ontario, Earl McCollum, Chairman, Ag. Technology	Ag. equipment 6 terms repair				Appleton Vocational School, Appleton	Farm equipment retailing and farm equipment partsmen	To be started.		
Pennsylvania Pennsylvania State U., Dr. Fred C. Snyder, Director of Short Courses University Park 16802	Farm equipment service and sales winter course	4 terms	34	3-9-68 3-8-69	Eau Claire Vocational School, Eau Claire	Farm-equipment retailing and farm equipment partsmen	To be started.		
South Dakota Lake Area Vocational-Tech. School, Watertown; Don Lindahl, Director	Farm equipment & diesel mechanic	2 years (2100 hours)	34	6-23-67	Wyoming Casper College, Casper 82601, William Henry, Head, Ag. Dept.	Farm machinery repair and maintenance	2 years	To be started fall '67	5-69
Tennessee Humboldt, Employment Service Office, Humboldt	Farm equipment mechanic*	6 mos.	20	5-6-67					

*Support from funds authorized by Federal Manpower Development & Training Act (MDTA).

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World's most popular valve face grinder (SIOUX Model 645L Valve Grinding Machine) because it's so versatile, easy-to-operate and achieves such precision results. Accommodates valve stems from .230" to $1\frac{1}{16}$ " diameter; valves from 15° to 75° . Features famous SIOUX lever-operated roller chuck. Wet grinds to within .001".

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Model 1450
 $\frac{1}{4}$ " air drill is light (2 $\frac{1}{4}$ lbs.) but powerful and rugged. Adjustable speed control; remote exhaust.



NEW Model 272
hi-speed slugger slams thru sheet metal with 3,500 pneumatic blows per minute. Weighs just 4 $\frac{2}{3}$ lbs.



Model 1495
 $\frac{1}{4}$ " all-angle electric drill. Small, compact, light but powerful. Length just 3 $\frac{3}{4}$ " at chuck and gear case.



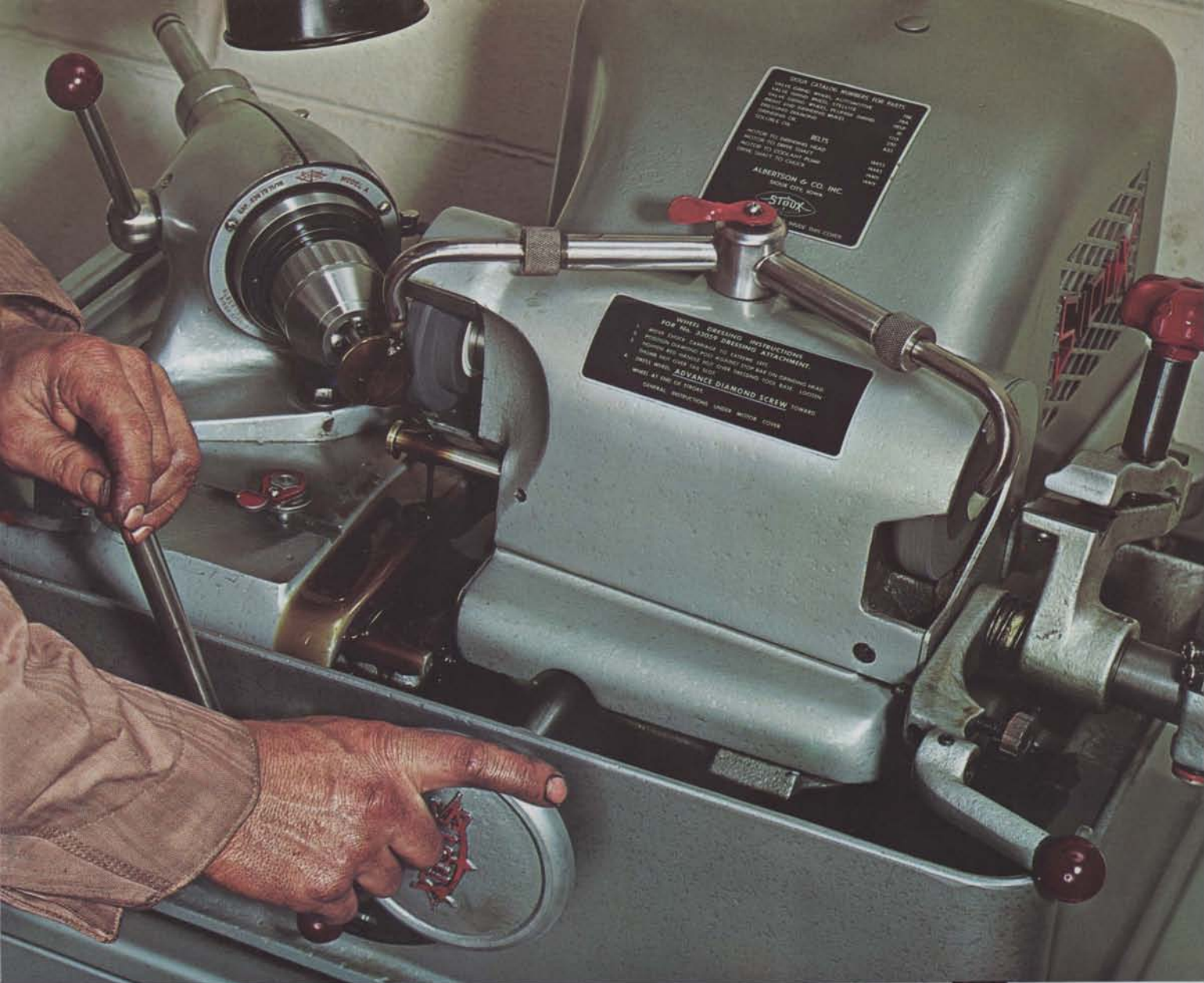
Model S-1310
 $\frac{1}{4}$ " air, all-angle drill. Exclusive SIOUX shape goes anywhere a fist can. Weighs only 2 lbs. 10 oz.



Model 1792—air driver for valve seat grinding. Has spline drive for accuracy, long life; same fine dual-action as electrics.



Model 1710-S—electric seat grinding driver takes wheels up to 2" in diameter. Has spline drive for 10 to 20 times longer life.



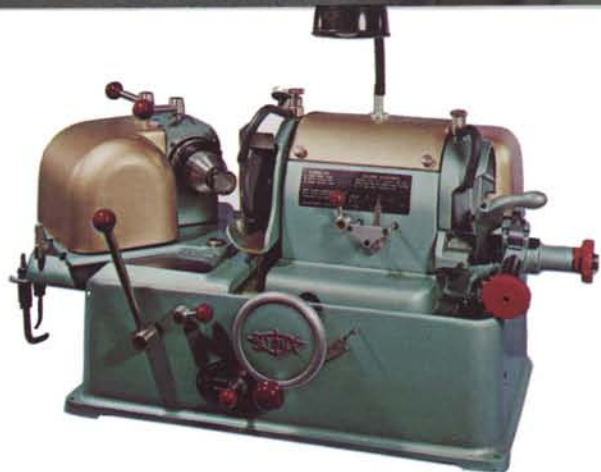
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NEW Model 1601-BB-S
ball bearing grinding wheel
holder for use with
tapered or expanding
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Model 685L—fully automatic valve grinding machine brings new speed, ease and economy to valve grinding. Requires less skill. Just pre-set the stops for stock to be removed. Machine grinds valve in 15 to 20 seconds, then stops, all automatically. Greater accuracy control and finish than ever before. Takes .230" thru $\frac{1}{16}$ " diameter stems.



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IH Introduces Hydrostatic

International Harvester's new drive on the 656 model offers single-lever control of speeds from 9 mph in reverse to 20 mph forward. By Mark Zimmerman

■ **FULL SCALE** production of 656 Hydrostatic All-Speed Drive tractors is now under way.

Farm tractors are first to feature the new drive. But hydrostatic transmissions will soon extend to all 18 versions of the model 656. Hydrostatic industrial tractors are slated for release this fall. About half of all 656 tractors will be built with the new transmission in a short time, it's expected.

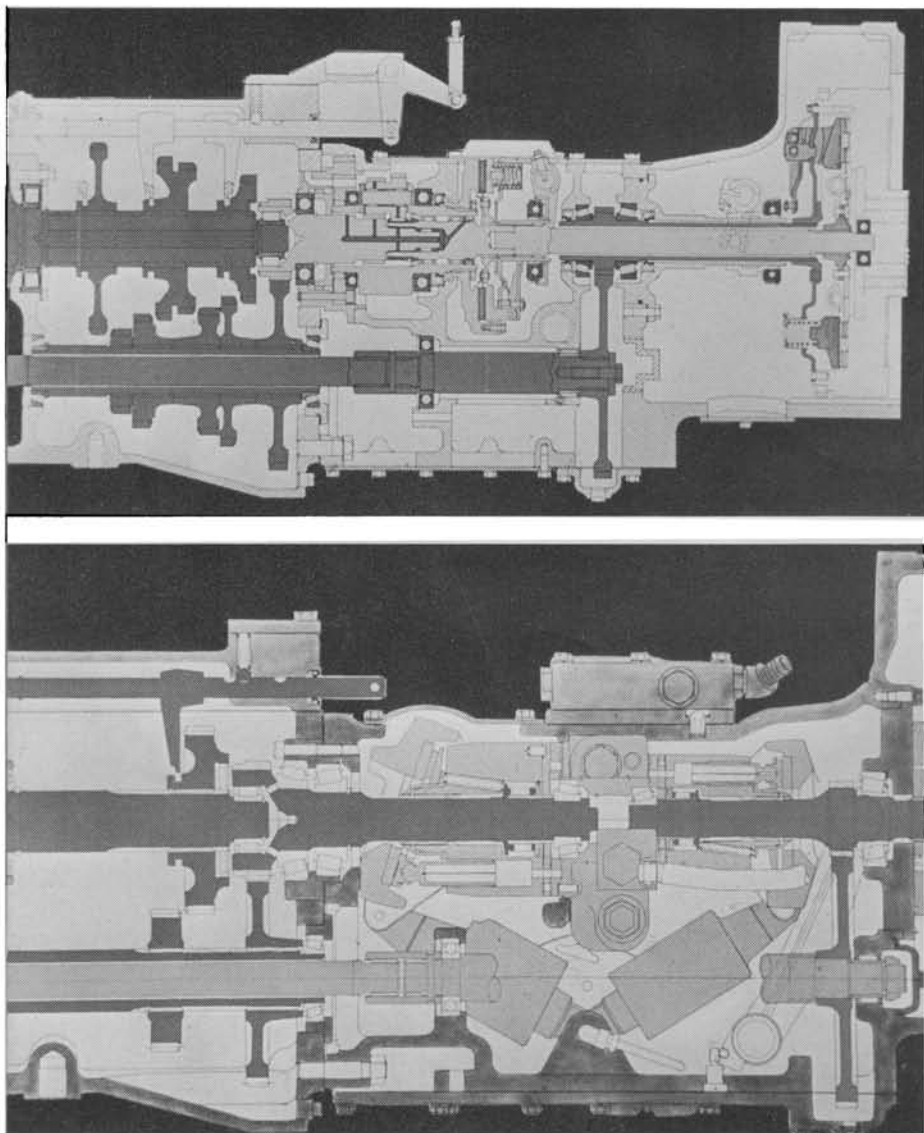
The heart of the hydrostatic drive is a hydraulic pump and motor. A control lever at the left of the operator controls the output of both the pump and the motor, controlling infinitely the direction, speed and force ultimately applied to the drive wheels. A two-speed range transmission is used with the drive to more closely tailor performance for heavy and light loads.

Accompanying illustrations compare the standard and new units, show the controls and tell how the system works.

International Harvester's strategy for entering the market with a hydrostatic transmission tractor is based on an interchangeable design package and a universal market.

Essentially the same transmission housing accommodates either the hydrostatic unit or the conventional 5-speed gear transmission and Torque Amplifier. Flywheel to differential di-

(Continued on page 56)

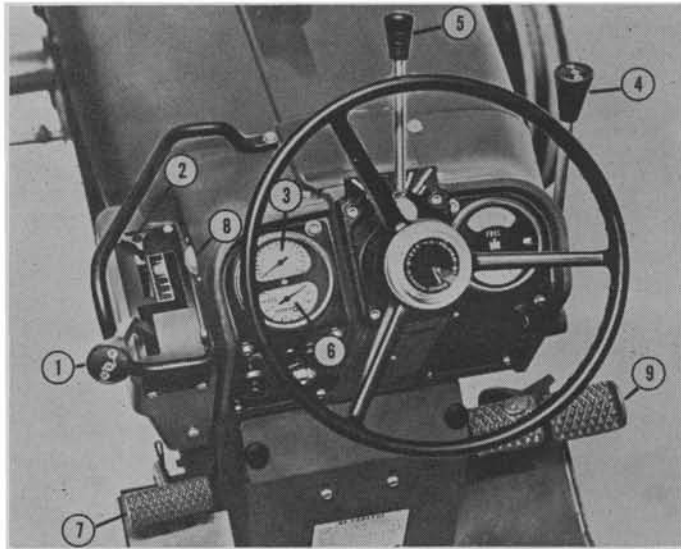


How transmissions compare—Cross sectional views of the 656 transmission housing, right to left: Above—clutch, Torque Amplifier and 5-speed transmission; Below—hydrostatic unit (pump, center section, motor and servo cylinders) and 2-speed-range transmission. Flywheel-to-differential dimensions are the same for both versions. The lower shaft in each view is the power-takeoff.

Which way . . . how fast?—**Forward:** SR control is pushed forward, causing the servo cylinder to tilt the pump swash plate right. Pump-to-motor fluid flow is clockwise. The motor turns the output shaft clockwise, for forward travel. **Stopped:** SR control is in neutral, with the pump swash plate in vertical position. The pump output is zero, so the output shaft is stopped. **Reverse:** With SR control pulled back, the swash plate is tilted left. Pump to motor flow is counterclockwise, reversing output shaft rotation and tractor direction.

The greater the pump swash plate angle, the greater the flow, the higher the motor speed and the faster the tractor goes.

Transmission Farm Tractor



Controls for the 656 hydrostatic tractor: 1—SR (speed ratio) control; 2—adjustable stop; 3—speedometer; 4—Hi-Lo range selector; 5—throttle; 6—tachometer; 7—'foot-n-inch' pedal; 8—quadrant light; 9—brake pedals.

The range selector controls a two-speed gear transmission between the hydrostatic unit and the differential. Top low-range speeds are 8 mph forward and 4 mph reverse; maximums in high are 20 mph forward and 9 mph reverse.

The SR control permits an infinite selection of forward and reverse speeds. The crosswise slot in the quadrant is for neutral, the front part for forward, the aft for reverse.

The adjustable stop marks a forward speed setting, giving a pre-set position for return of SR control after slowing, stopping or reversing the tractor.

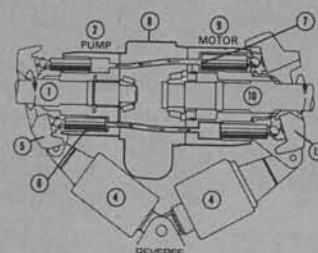
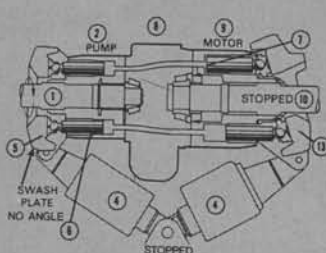
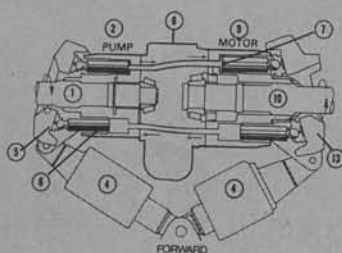
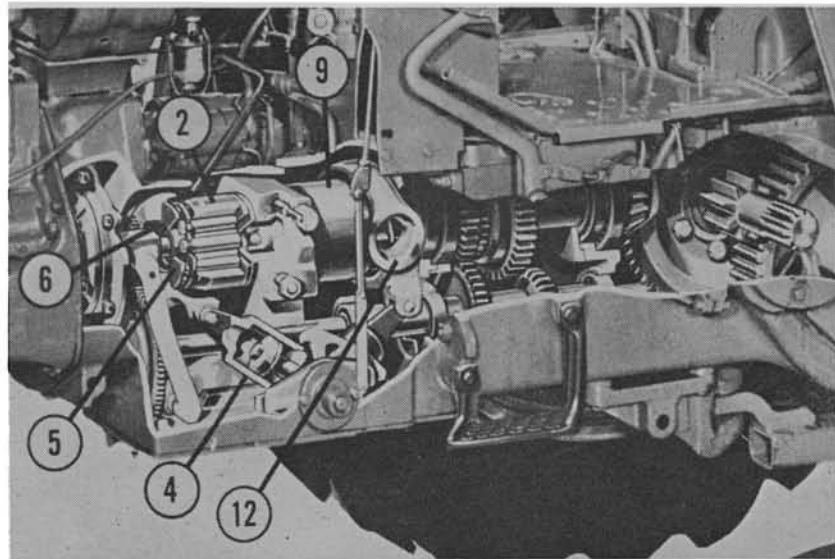
The box on the decal beside the quadrant's forward slot indicates the most efficient operating speeds, which are 3 to 6 mph in low and 6 to 12 mph in high. The 'foot-in-inch' pedal is used for emergency stops, close-quarters operation and when starting the engine.

Inside a hydrostatic transmission—Chief working parts of IH's hydrostatic unit: 1—engine-driven input shaft; 2—axial piston pump; 4—servo cylinders; 5—reversing pump swash plate; 6—pistons; 7—cylinder bore; 8—center section; 9—axial piston motor; 10—output shaft; 12—pivot mounting of swash plate; 13—motor swash plate.

Both pump and motor have variable displacements; their outputs are controlled by moving the SR lever, thus actuating the servo cylinders which tilt the swash plates. The design gives infinite control over characteristics of fluid in the pump to motor passages.

There is infinite control of fluid flow rate, direction of fluid flow and fluid pressure. These result in infinite control of speed, direction and force on the output shaft.

The angle of the pump's reversing swash plate determines fluid flow rate and direction (see drawing below). The angle of the motor swash plate determines fluid pressure, or force applied to the output shaft. The angle of the motor swash plate, at maximum during zero pump output, is reduced at higher speeds.

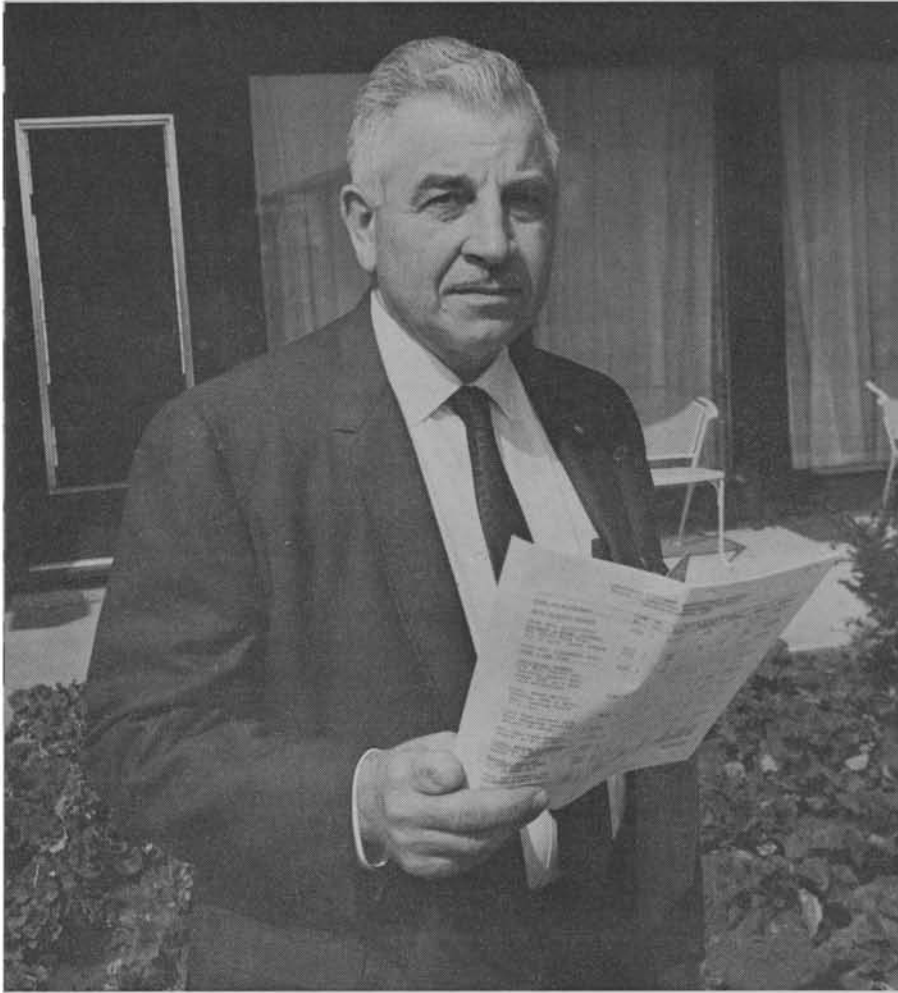


Professional buyers brief makers on

EQUIPMENT NEEDS, IMPORTANCE OF SPECIFICATIONS

**FIEP's special council holds semi-annual meeting
at Fontana, Wisc., May 25-26.**

By Geo. H. Seferovich



George Seeley, professional buyer of industrial equipment.

■ MEMBERS of the Industrial Equipment Manufacturers Council were treated to a forthright view of industrial equipment needs, selection and applications from the viewpoint of a professional buyer.

George F. Seeley has served the Huron-Clinton Metropolitan Authority in Detroit for 21 years. He is chief equipment engineer in the department of purchasing, supply, and equipment maintenance. He is a professionally trained landscape architect, and has spent his working years in landscape design, construction and maintenance.

Seeley voiced a plea of many of his co-workers in park and recreation assignments for up-to-date equipment service shop data. Finally, he sketched the basic outlines



'This year,' forecast J. E. Bell, Illinois Highways Dept., 'we'll mow 500,000 acres of Illinois right-of-way. By 1972, I expect the acreage to double, so we're seeking improvements in methods, equipment and practices to lower costs or give us more for our efforts.'

Bell said a study report will soon be available exploring the direction highway and roadside maintenance practices and equipment usage should take. It's a project of U.S. Public Roads bureau, U. of Illinois, and Illinois Highways Dept.

'The many types of cutting edge are a problem in efficient purchase and stocking for replacement,' he said, adding that size, shape and placement of holes could be more standard. He praised IEMC's specifications definitions, urging its continuation in the directions started and an increase in subject matter areas and product classes covered.



of recreation needs as they will arise from a growing, rich economy.

Here are some major excerpts:

"The general standardization and meaningful uniformity of specifications used in most major classifications of utility equipment are very important from the purchaser's standpoint. IEMC's role in the development of standards and specifications is commendable.

"We in parks and recreation services must use best methods and equipment to maximize benefits for the public we serve. With today's labor market, we can no longer afford not to mechanize. With the wide variety of standard and specialized types of machines offered today, we can practically tailor the equipment to the operation.

"There are instances, however, in which we must compromise and select a unit of more universal type because the work will not justify a specialized unit.

"Very little of the utility equipment presently offered was designed specifically for parks and recreation needs. It is true that many of the equipment needs are common to other fields of construction and maintenance. However, in the class or types of equipment for soil and site preparation, seeding and turf maintenance, needs for construction and maintenance of parks and recreational areas have had a great influence on machine design and specifications.

"Accordingly, our requirements are
(Continued on page 52)



'Little chance for greater restraints or tighter government controls of materials,' opined Henry Danuser, IEMC's materials supply specialist. Danuser confers twice yearly (as a member of the FIEL's materials committee) with U.S. Business and Defense Services Administration officials. Many materials, he said, are in tight supply—principally non-ferrous ingredients of steel alloys; end products of foundries, such as gears, require 25 weeks' lead time. Overall, however, the steel supply is in good relation to foreseeable demand.



Attracting young people to the equipment manufacturing and marketing fields was the special concern of Oliver Corp.'s S. F. Beatty, chairman of IEMC's marketing committee. A plan was suggested to set up an invitational panel of technical school officials to discuss their programs and the attitudes of students and graduates toward job opportunities in the industrial equipment industry.



IEMC Chairman is Phil Jenkins (left), Jenkins Equipment Co.; program chairman is Robert M. Magee, Deere & Co. Next meeting will be Nov. 29-Dec. 1, near Mobile, Ala. and will include a visit to timber operations in the area.



Market intelligence through reliable figures is the concern of Case's W. J. Banks and his statistics committee. The group regularly discusses changes in items reported, definitions and similar technical considerations. Data covering manufacture and retail sales are available only to members.

PUTTING TRACTOR REPAIR COSTS IN PERSPECTIVE . . .

. . . with respect to purchase price, hours of use annually, and other costs.

By Mark Zimmerman

■ **ARE DIESEL** tractors really more expensive to service than gasoline tractors? Yes, but . . .

This question and its answer are part of the U. of Illinois field study of farm tractor repair costs that Prof. Jay Weber conducted over seven years. The June 7 I&T reported portions of the 47-unit study telling what items are most frequently repaired, how often, and what they cost. Now let's look at repair costs in perspective. (And in a later article, we'll see what the study showed about variations in tractor repair costs.)

I: How repair costs increase during tractor life

Costs for diesel tractor repairs are higher than those for gasoline versions, and diesels cost more initially, too. So to compare the two types equally, the repair costs are considered in this chart strictly as a per cent of purchase price. In the Illinois study, this came to about 50 per cent of the

II: How annual use affects repair costs (10-year totals and hourly rates at 3 use levels)

Total repair costs go up with tractor age and use, but the cost per hour is less at higher use levels. This chart, then, considers both purchase price and various use levels, showing repair costs as a per cent of purchase price and as a total at the end of 10 years for 400, 550 and 700 hours of annual use. Purchase prices are set here for \$5600 for

III: Profile of total cost

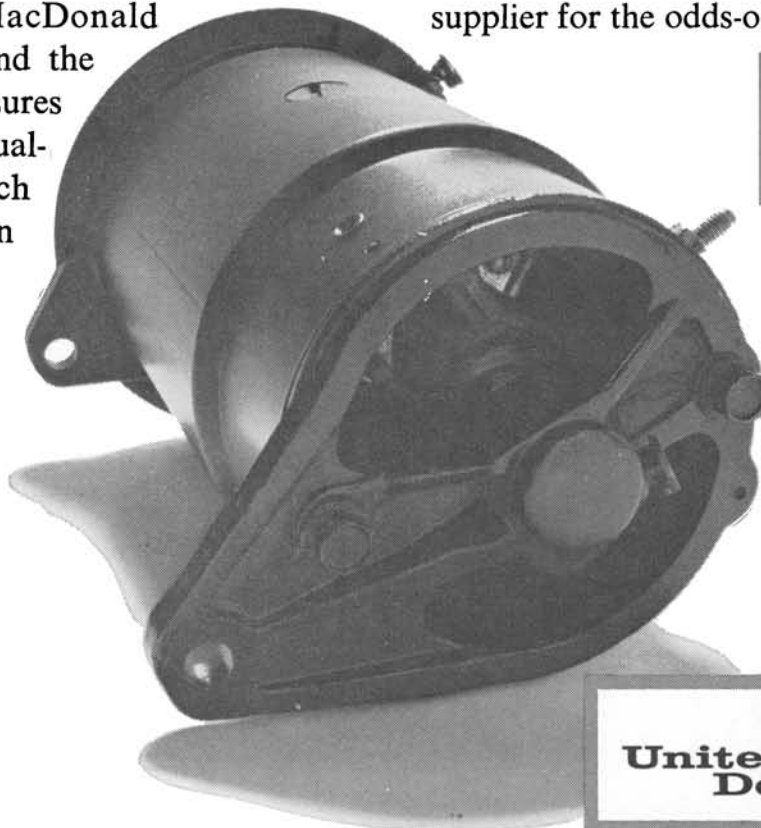
A third way of putting repair costs into perspective is to compare them to total tractor cost. These curves are cumulative, so that top curve equals total cost. Basis for the calculations: Depreciation is 20 per cent of purchase price the first year, 10 per cent of remaining value thereafter; interest is 6.5 per cent; taxes and insurance are 2.5 per cent of current value; fuel use is figured from the half-load consumption run in the Nebraska Tests.

The curves on this chart cover the total cost per hour of a gaso-

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down, cleaned, inspected and built up with quality parts. Each unit is 100% tested for mechanical and electrical performance. There's none better. Call your United Delco supplier for the odds-on favorite in rebuilds.



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AUCTION PRICES OF USED EQUIPMENT

An exclusive L&T monthly report of actual prices paid
at these leading national wholesale auctions recently.

**Asterisk beside tractor price indicates highest bid offered on tractors which were not sold.*

MONTGOMERY TRACTOR CO. Seymour, Tex.

Allis-Chalmers Tractors

D19 diesel, 1963 (Fair)	\$2160*
D17, 1963 (Rough)	1110
D17 diesel, 1961 (Good)	1400
D17, 1960 (Good)	1400*
D17 diesel, 1959 (Fair)	1180*
D17, 1959 (Fair)	1050
D17, 1959 (Fair)	1050
D14, 1960 (Fair)	650
D14, 1960 (Fair)	620
WD45, 1955 (Fair)	510*
WD, 1949 (Fair)	430
WD, 1948 (Fair)	300
WD, 1948 (Fair)	300
WD, 1948 (Fair)	250
WD, 1948 (Fair)	250

Case Tractors

930 diesel, 1963 (Good)	3000
630 diesel, 1962 (Fair)	990
800 LP, 1958 (Fair)	710
600 LP, 1958 (Fair)	500
200, 1958 (Rough)	180
500 diesel, 1956 (Good)	970

John Deere Tractors

4010 diesel, 1960 (Fair)	2675*
4010 diesel, 1960 (Fair)	2600*
2010 diesel, 1961 (Fair)	1200
2010 diesel, 1961 (Fair)	1140
730 diesel, 1959 (Good)	2210
730 diesel, 1959 (Fair)	2010
730 diesel, 1959 (Fair)	2010
730 diesel, 1959 (Fair)	1925
630 LP, 1959 (Fair)	1060
530 LP, 1959 (Fair)	900
720, 1958 (Good)	1540*
720 LP, 1957 (Fair)	1170*
720 LP, 1957 (Rough)	750
720 LP, 1957 (Rough)	690
620, 1957 (Fair)	1200
700 LP, 1955 (Fair)	710
70 diesel, 1955 (Rough)	675
70, 1954 (Fair)	770
70, 1953 (Rough)	435
60, 1954 (Fair)	450
60 LP, 1953 (Fair)	340
50, 1954 (Rough)	230
G, 1951 (Fair)	310
G, 1950 (Fair)	455
G, 1950 (Fair)	425
G, 1950 (Fair)	380
G, 1949 (Fair)	290*
G, 1948 (Fair)	310
A, 1951 (Fair)	275
A & cult., 1949 (Fair)	300
A, 1949 (Fair)	230
A, 1949 (Fair)	225
A, 1947 (Fair)	215
B, 1950 (Fair)	265

Ferguson Tractors

40, 1957 (Rough)	375
40, 1956 (Fair)	790*
35, 1956 (Fair)	750
35, 1956 (Fair)	650*
35, 1956 (Rough)	360
30, 1952 (Fair)	325
30, 1952 (Rough)	250
20, 1951 (Fair)	340
20, 1951 (Fair)	295
20, 1950 (Fair)	310
20, 1950 (Rough)	175
20, 1948 (Rough)	180

Ford Tractors

821 & backhoe, 1960 (Good)	1150
851 LP, 1958 (Fair)	870
940, 1955 (Fair)	600
940, 1955 (Fair)	575

850, 1956 (Fair)	\$ 790
850, 1956 (Fair)	675
850, 1955 (Fair)	810
850, 1955 (Fair)	790*
850, 1955 (Fair)	780
850, 1955 (Fair)	770
850, 1955 (Fair)	690
850, 1955 (Rough)	430
660, 1955 (Fair)	650
640, 1955 (Fair)	600*
NAA, 1953 (Fair)	510
NAA, 1953 (Rough)	430
8N, 1951 (Good)	520
8N, 1951 (Good)	510
8N, 1951 (Good)	500
8N, 1951 (Fair)	475
8N, 1951 (Fair)	475
8N, 1951 (Fair)	470*
8N, 1951 (Fair)	460
8N, 1951 (Fair)	460
8N, 1951 (Fair)	450
8N, 1951 (Fair)	420
8N, 1951 (Fair)	390*
8N, 1950 (Fair)	380
8N, 1950 (Fair)	380
8N, 1949 (Fair)	350
8N, 1948 (Fair)	360
8N, 1948 (Fair)	340

Ford-Ferguson Tractors

9N, 1946 (Fair)	295
9N, 1945 (Fair)	325

International Harvester Tractors

706 diesel, 1965 (New)	4750
504 LP, 1963 (Fair)	1650
660 diesel, 1960 (Rough)	500
560 LP, 1961 (Good)	1800
560, 1959 (Fair)	1750*
560 LP, 1959 (Fair)	1505
240 backhoe, ldr., 1961 (Fair)	1300
450 diesel, 1957 (Fair)	565
350, 1958 (Fair)	660
350 LP, 1957 (Fair)	355
350 LP, 1957 (Fair)	350
400, 1955 (Fair)	600
400 LP, 1955 (Fair)	410
400 LP, 1955 (Fair)	400
400 LP, 1955 (Rough)	300
300, 1955 (Fair)	435
Super MTA, 1954 (Fair)	770
Super MTA, 1954 (Fair)	640*
Super M, 1953 (Good)	720*
Super A, 1952 (Fair)	340
M, 1949 (Fair)	385
M, 1948 (Fair)	390
M, 1946 (Fair)	320*
M, 1944 (Fair)	340
M, 1944 (Fair)	300
M, 1944 (Rough)	230
M, 1942 (Rough)	230
M, 1942 (Rough)	150
H, 1946 (Rough)	150*
H, 1945 (Rough)	110
C, 1950 (Fair)	270

Massey-Ferguson Tractors

Super 90 LP, 1963 (Fair)	1700*
85 diesel, 1961 (Fair)	1050
85 LP, 1960 (Fair)	900
85, 1960 (Rough)	470
65, 1959 (Fair)	1100
50, 1961 (Fair)	1080*
35 diesel, 1963 (Good)	1400

Massey-Harris Tractors

333, 1950 (Fair)	400
44, 1948 (Fair)	100*

Minneapolis-Moline Tractors

602 LP, 1963 (Fair)	2020*
M5, 1961 (Fair)	1310*
M5, 1960 (Fair)	1175
5-Star, 1958 (Fair)	400*

UB, 1955 (Fair)	\$ 410*
UB, 1955 (Fair)	370
UB, 1954 (Fair)	250
ZB, 1954 (Fair)	110*

Oliver Tractors

Super 88 diesel, 1954 (Fair)	580
Super 88 diesel, 1954 (Fair)	520
Super 88 diesel, 1954 (Fair)	500
Super 55, 1955 (Fair)	490*
Super 55, 1955 (Rough)	250

JONES FARM EQUIPMENT CO. Dothan, Ala.

Allis-Chalmers Tractors

D17, 1958 (Good)	\$1325
WD45, 1956 (Good)	425*
WD45, 1954	
w/corn picker (Excellent)	1475*
D15, 1950 loader, backhoe	
(Good)	2300
WD LP, 1953 (Fair)	210
WD cult., 1953 (Excellent)	400
WD, 1952 (Fair)	265
WD, 1952 (Rough)	110
WD LP, 1951 (Rough)	110
CA, 1955 (Good)	375*

Case Tractors

300, 1956 (Fair)	210
DC, 1954 (Good)	330

John Deere Tractors

4010 diesel, 1960 (Good)	2860
3010 diesel, 1960 (Good)	1900
3010 diesel utility, 1960 (Good)	1700
730 diesel, 1958 (Good)	1660
720 diesel, 1958 (Excellent)	1425
R, 1951 (Good)	515
530 LP, 1960 (Good)	825
520 LP, 1957 (Good)	750
70, 1955 (Excellent)	900*
2010, 1961 (Fair)	610
2010, 1961 (Good)	870
1010, 1963 (Excellent)	1000
1010, 1961 (Fair)	700*
1010, 1961 (Fair)	750
1010, 1961 (Good)	870
50, 1954 (Fair)	410
435 diesel, 1959 (Rough)	250*
435 diesel, 1959 (Fair)	450
430, 1960 (Fair)	305
430, 1960 (Excellent)	735
430, 1960 (Rough)	275
430, 1959 (Fair)	430
430, 1959 (Good)	700
420 cult, 1956 (Fair)	450*
420, 1956 (Fair)	310*
420 std., cult,	
planter, 1956 (Excellent)	735
B, 1951 (Fair)	100*
B cult., planter, 1951 (Good)	190
40, 1954 (Good)	300
40, 1954 (Fair)	260*

Ferguson Tractors

Sup. 90 diesel, 1964 (Fair)	1900
Sup. 90 diesel, 1964 (Good)	2100
65 diesel, 1962 (Fair)	760
65 diesel, 1961 (Good)	1190
65, 1959 (Fair)	990
65, 1959 (Good)	1195
65 high-clearance, 1958 (Fair)	960
50, 1958 (Good)	750
135 diesel, 1965 (Fair)	1570
35 diesel 3 cyc., 1963 (Fair)	1030*
35, 1963 (Excellent)	1100
35 diesel 3 cyc., 1963 (Rough)	660
35 diesel, 1959 (Fair)	525
35 diesel, 1959 (Fair)	600
35, 1957 (Fair)	750

30, 1953 (Fair)	\$ 260
30, 1953 (Fair)	350
30, 1953 (Rough)	185
30, 1952 (Fair)	350*
30, 1952 (Fair)	340
30, 1952 (Fair)	275*
T020, 1951 (Good)	310
T020, 1950 (Good)	350*
T020, 1950 (Fair)	240
T020, 1950 (Rough)	160
T020, 1950 (Good)	325
T020, 1949 (Rough)	135
T020, 1949 (Excellent)	525

Ford-Ferguson Tractors

2N, 1944 (Fair)	160
9N, 1943 (Fair)	135

Ford Tractors

6000, 1961 (Good)	1500
4000 w/backhoe,	
blade, 1963 (Good)	1960*
4000 S.O.S., 1963 (Good)	1000
4000 S.O.S., 1963 (Good)	1070
Sup. Maj., 1961 (Fair)	550*
Pow. Maj., 1959 (Rough)	340
Pow. Maj., 1957 (Good)	660
Major, 1954 (Fair)	350
871 diesel, 1959 (Fair)	680
851, 1962 (Good)	820
850, 1957 (Fair)	660
841 diesel, 1960 (Fair)	610*
841, 1959 (Excellent)	1150
841, 1959 (Rough)	150
841 diesel, 1958 (Good)	720
820 backhoe & loader, 1956	
(Fair)	950
640, 1956 (Good)	700
640, 1955 (Good)	700
640, 1955 (Good)	780*
Sup. Dex., 1963 (Rough)	340
Sup. Dex., 1963 (Good)	675
Dexta, 1960 (Rough)	325
Dexta, 1959 (Good)	575*
Dexta, 1959 (Fair)	450*
Dexta, 1959 (Good)	620
541, 1959 (Good)	500
8N, 1952 (Fair)	350
8N, 1948 (Fair)	280
8N, 1948 (Good)	370

International Harvester Tractors

706, 1965 (Good)	2900
460 utility, 1960 (Fair)	900*
460 utility (no pto), 1960 (Good)	950
460 utility, 1960 (Good)	1125*
460 utility (no pto), 1960 (Good)	950
450, 1957 (Excellent)	1250
400, 1954 (Rough)	375
Sup. M, 1954 (Fair)	600
Sup. M, 1953 (Good)	750
Sup. MD, 1953 (Excellent)	710*
M, 1951 (Fair)	380
MD, 1950 (Good)	400*
MD, 1950 (Good)	425*
M, 1950 (Fair)	330
M, 1950 (Rough)	250
M, 1948 (Fair)	275
M, 1947 (Rough)	230
M, 1946 (Excellent)	520*
B414 diesel, 1963 (Rough)	490
B414 diesel, 1963 (Fair)	710*
B414 diesel, 1962 (Fair)	750*
B414, 1962 (Fair)	650
B414, 1962 (Excellent)	1000
350 utility, 1957 (Fair)	375*
350 diesel utility, 1956 (Rough)	210
340, 1960 (Fair)	400
340 mower, 1958 (Excellent)	800
300, 1955 (Rough)	160
300, 1955 (Fair)	280
B275, 1959 (Good)	510*
B275, 1959 (Fair)	425
B275, 1959 (Fair)	400
B275, 1959 (Fair)	485
B275, 1959 (Rough)	165

240, 1958 (Fair)	\$ 330
240, 1958 (Rough)	270
240, 1958 (Good)	435
H, 1952 (Excellent)	385
Sup. C cult., 1953 (Fair)	220
C, 1950 (Fair)	150
130, 1956 (Good)	475*
Sup. A cult., 1950 (Good)	680
Sup. A cult., 1949 (Fair)	580*
Sup. A cult., 1948 (Fair)	475
Cub, 1949 (Fair)	360
Cub cult, planter, 1948 (Fair) ..	400

Massey-Harris Tractors

55 LP, 1957 (Good)	300
50, 1956 (Good)	660

Oliver Tractors

550 diesel, 1960 (Fair)	590
550 diesel, welded block, 1958 (Fair)	500
55 diesel, 1955 (Good)	460

Crawler Tractors

Cat. 4 w/bucket, 1947 (Fair)	950*
440 Deere, 1958 (Rough)	250
420 Deere, blade, 1957 (Good) ..	1175
420 Deere, blade, 1957 (Good) ..	1000
420 Deere, loader, 1956 (Fair) ..	500*
OC4 Oliver, blade, 1958 (Excellent)	1025
OC12 Oliver, bucket, 1956 (Good) ..	975*

YODER & FREY, INC. Archbold, Ohio

Allis-Chalmers Tractors

D-19, 1961 (Fair)	\$2850
D-17, 1960 (Fair)	1490
D-17 diesel, 1959 (Rough)	1225*
D-17, 1959 (Good)	1550*
D-15, 1963 (Fair)	1310
D-14, 1960 (Rough)	925
D-14, 1960 (Rough)	975
D-14, 1958 (Good)	860*
D-12, 1962 (Fair)	950
D-10, 1961 (Good)	700*
WD-45 diesel, 1956 (Good)	800*
WD-45 diesel, 1954 (Fair)	650
WD-45, 1954 (Fair)	620
WD-45 (Rough)	350*
WD, 1953 (Good)	460
WD, 1952 (Fair)	385
WD, 1950 (Fair)	440
WC (Fair)	160
CA, 1953 (Fair)	415*
CA (Rough)	250
C hyd. pl, cult, 1947 (Rough) ..	195
C cult. (Rough)	105
B cult., 1950 (Fair)	260
B cult., 1949 (Fair)	150

Case Tractors

800 diesel, 1959 (Good)	1130
600, 1957 (Fair)	570
500, 1958 (Fair)	700
LA, 1950 (Rough)	370*
SC, 1953 (Rough)	325*
VAC ldr., 1948 (Rough)	300
VAC (Rough)	100

Cockshutt Tractors

570, 1960 (Good)	1250
560, 1957 (Fair)	825*
550, 1960 (Fair)	925*
Golden Eagle 40, 1955 (Fair) ..	325*
40, 1951 (Fair)	410
30, 1949 (Fair)	200
30 cult. (Fair)	220*
30, 1947 (Rough)	180

David Brown Tractors

990 diesel, 1965 (Good)	\$2150
990 diesel, 1965 (Good)	2250

John Deere Tractors

4010, 1962 (Good)	3400*
4010 LP 3/pt., 1961 (Fair)	3450*
4010 LP, 1960 (Rough)	3000*
3010, 1963 (Fair)	2420*
3010 LP, 1962 (Good)	2725
2010 (Good)	1600
2010 diesel, 1962 (Good)	1200*
2010 diesel, 1961 (Fair)	1100
2010 diesel, 1961 (Fair)	1025*
2010, 1961 (Fair)	1225*
720 diesel, 1957 (Good)	1750
7201, 1956 (Good)	1950
70 diesel, 1954 (Fair)	1150
70 LP, 1954 (Fair)	830*
70 LP, 1953 (Fair)	1110
G, 1951 (Fair)	445
G, 1948 (Rough)	330
G, 1944 (Rough)	370*
630 LP, 1957 (Fair)	1250*
620 LP, 1958 (Rough)	750
620 LP, 1956 (Rough)	675*
60, 1953 (Rough)	1000
60 LP, 1953 (Rough)	625*
60, 1953 (Rough)	610
60, 1953 (Rough)	575*
60 (Rough)	400
A, 1952 (Good)	510*
A, 1951 (Fair)	450*
A, 1951 (Fair)	440*
A, 1951 (Fair)	435
A, 1950 (Good)	550
A, 1948 (Fair)	385*
A, 1948 (Fair)	370
A, 1948 (Fair)	360*
A, 1948 (Rough)	280
A, 1948 (Rough)	250
A, 1948 (Rough)	250
A, 1942 (Rough)	210
A, 1940 (Rough)	175
A	175
AR	310
520, 1957 (Good)	1100*
50, 1953 (Fair)	620*
MT, 1950 (Rough)	250
MT plow. cult., 1949 (Fair) ..	340
MT, 1949 (Rough)	280*
MT ldr., 1948 (Fair)	425
MT, 1948 (Rough)	230
430, 1958 (Rough)	810*
40 crawler (Fair)	810*
40 cult., 1954 (Good)	565*
B, 1950 (Fair)	355
B, 1948 (Rough)	295

Ferguson Tractors

40, 1956 (Fair)	900*
35 ldr., 1953 (Rough)	775*
30, 1954 (Fair)	445
20, 1950 (Fair)	415
20, 1950 (Rough)	320

Ford Tractors

6000, 1963 (Good)	2050
6000, 1960 (Rough)	1700*
4000, 1961 (Rough)	900
3000, 1965 (Good)	1575*
2000, 1964 (Good)	1550*
860, 1956 (Fair)	975*
850 ldr., 1956 (Rough)	850*
801 (Fair)	700
NAA ind. ldr., 1954	890
NAA, 1954 (Rough)	475*
Jub., 1953 (Fair)	550
Jub., 1953 (Rough)	420
Jub., (Rough)	400

8N hoe, ldr.	\$ 775*
8N, 1952 (Fair)	435
8N, 1951 (Good)	535
8N, 1951 (Good)	500
8N, 1951 (Fair)	425*
8N, 1950 (Rough)	270*
8N trencher, 1950 (Rough)	200*
8N, 1949 (Fair)	485
8N, 1949 (Rough)	320
8N, 1948 (Fair)	375*
8N, 1948 (Rough)	340*
8N, 1948 (Fair)	300
8N, 1948 (Rough)	240*
8N burned, ldr.	130

Ford-Ferguson Tractors

9N, 1947 (Good)	310
9N, 1947 (Fair)	295
9N, 1947 (Rough)	200
9N ldr., 1946 (Good)	520*
9N, 1946 (Fair)	290
9N, 1946 (Fair)	280
9N (Fair)	305
9N, 1944 (Rough)	230
9N, 1944 (Rough)	200
9N, 1944 (Rough)	170*
9N	175
9N ldr., 1943 (Fair)	495
9N, 1943 (Rough)	270*
9N, 1943 (Rough)	210
9N, 1942 (Fair)	500
9N, 1942 (Rough)	200*

Fordson Tractors

Maj. diesel	250
Maj. diesel, 1950 (Rough)	425*

International Harvester Tractors

600 diesel, 1956 (Fair)	525
560, 1962 (Good)	1625*
560, 1961 (Rough)	1500*
504 LP, 1964 (Good)	1700
460 diesel, 1962 (Good)	1750*
460 diesel, 1962 (Fair)	1300*
460 diesel, 1961 (Fair)	1550
460, 1960 (Good)	1700*
460 diesel, 1959 (Fair)	1500*
460 diesel utility, 1959 (Rough) ..	800*
460, 1956 (Rough)	1325*
460, 1955 (Fair)	1400*
450 diesel, 1957 (Fair)	1300
450, 1957 (Rough)	650
400 diesel, 1956 (Fair)	800*
400 LP, 1956 (Good)	1340
400, 1956 (Fair)	910*
400 diesel ldr., 1955 (Fair)	875*
400 diesel, 1955 (Fair)	825
400, 1955 (Fair)	950
400 p.s., 1954 (Rough)	725*
MTA diesel, 1954 (Rough)	785*
Sup. MD, 1953 (Rough)	310
Sup. M, 1953 (Good)	950
Sup. M LP, 1953 (Rough)	575*
Sup. M	210
M, Sup. M Kit, 1950 (Fair)	670
M, 1952 (Fair)	600
M, 1945 (Rough)	460*
M, 1948 (Rough)	275*
M, 1953 (Rough)	325*
M, 1951 (Fair)	590
M, 1946 (Fair)	535
M, 1944 (Fair)	510
M, 1944 (Rough)	530
M, 1942 (Good)	520
M, 1942 (Fair)	500
350 utility, 1959 (Rough)	500*
350 diesel utility, 1957 (Rough) ..	500
350 utility, 1957 (Rough)	300*
350 diesel (Rough)	380
340 utility, 1959 (Fair)	950*
340 utility, 1959 (Fair)	825
300, 1955 (Fair)	725*

Sup. H, 1953 (Rough)	\$ 475
H, 1950 (Fair)	360
H, 1950 (Rough)	270*
H, 1949 (Fair)	360*
H, 1945 (Rough)	285
H, 1945 (Rough)	220
H, 1942 (Rough)	260
H, 1941 (Fair)	260
H, 1941 (Fair)	220
H	130
H	100
240 mower (Fair)	475*
230, 1957 (Rough)	470*
Sup. C, 1952 (Fair)	295
C, 1950 (Fair)	275
C, 1950 (Rough)	245
A cult. (Fair)	275
A cult., 1949 (Rough)	215
A, 1946 (Rough)	180
BN	300
BN	245
BN, 1948 (Fair)	190
BN cult., 1946 (Rough)	260
B cult., 1946 (Rough)	160
B cult., 1941 (Rough)	215
Cub cult., mower (Fair)	385
Cub, 1950 (Rough)	250
WD-9, 1946 (Rough)	240*
W-9, 1949 (Fair)	360*
W-9, 1948 (Rough)	300

Massey-Ferguson Tractors

85, 1962 (Rough)	1525
85, 1959	1400*
85, 1959 (Rough)	1300*
85, 1958 (Fair)	1400*
65, 1961 (Fair)	1210*
65, 1961 (Fair)	1110*
40, 1957 (Fair)	945

Massey-Harris Tractors

50 loader, 1956 (Rough)	875
444, 1955 (Rough)	610*
33, 1947 (Rough)	120
Pony (Fair)	175

Minneapolis-Moline Tractors

602, 1964 (Good)	2000*
ZB loader, 1954 (Fair)	400
335, 1957 (Rough)	535*
UB, 1956 (Good)	550
UB, 1956 (Rough)	350
UB, 1954 (Fair)	450*
UB, 1954 (Rough)	290*
Z, 1948 (Rough)	125

Oliver Tractors

880 diesel, 1958 (Fair)	1050
Sup. 88 diesel, 1955 (Rough)	700*
Sup. 88, 1954 (Fair)	710
Sup. 88, 1954 (Fair)	870*
88 LP, 1954 (Fair)	860
88 diesel, 1951 (Fair)	725*
88, 1951 (Good)	590
88 diesel, 1950 (Rough)	420
88, 1950 (Fair)	510
88 LP, 1950 (Rough)	210
770 diesel, 1958 (Fair)	950*
770 diesel, 1957 (Good)	1110
Sup. 77 diesel, 1956 (Fair)	565
Sup. 77, 1955 (Rough)	450
Sup. 77	200*
77 diesel, 1955 (Fair)	490
77 diesel, 1952 (Fair)	440
77 diesel	360*
77 diesel, 1951 (Fair)	370
77, 1951 (Rough)	325
70, 1942 (Rough)	150
600 diesel welded block	375*
60 cult., 1948 (Fair)	260
HG	340

NOTES:

Prices reported are for individual sales at wholesale on "as is," "cash and carry" basis.

Prices reported are NOT averages.

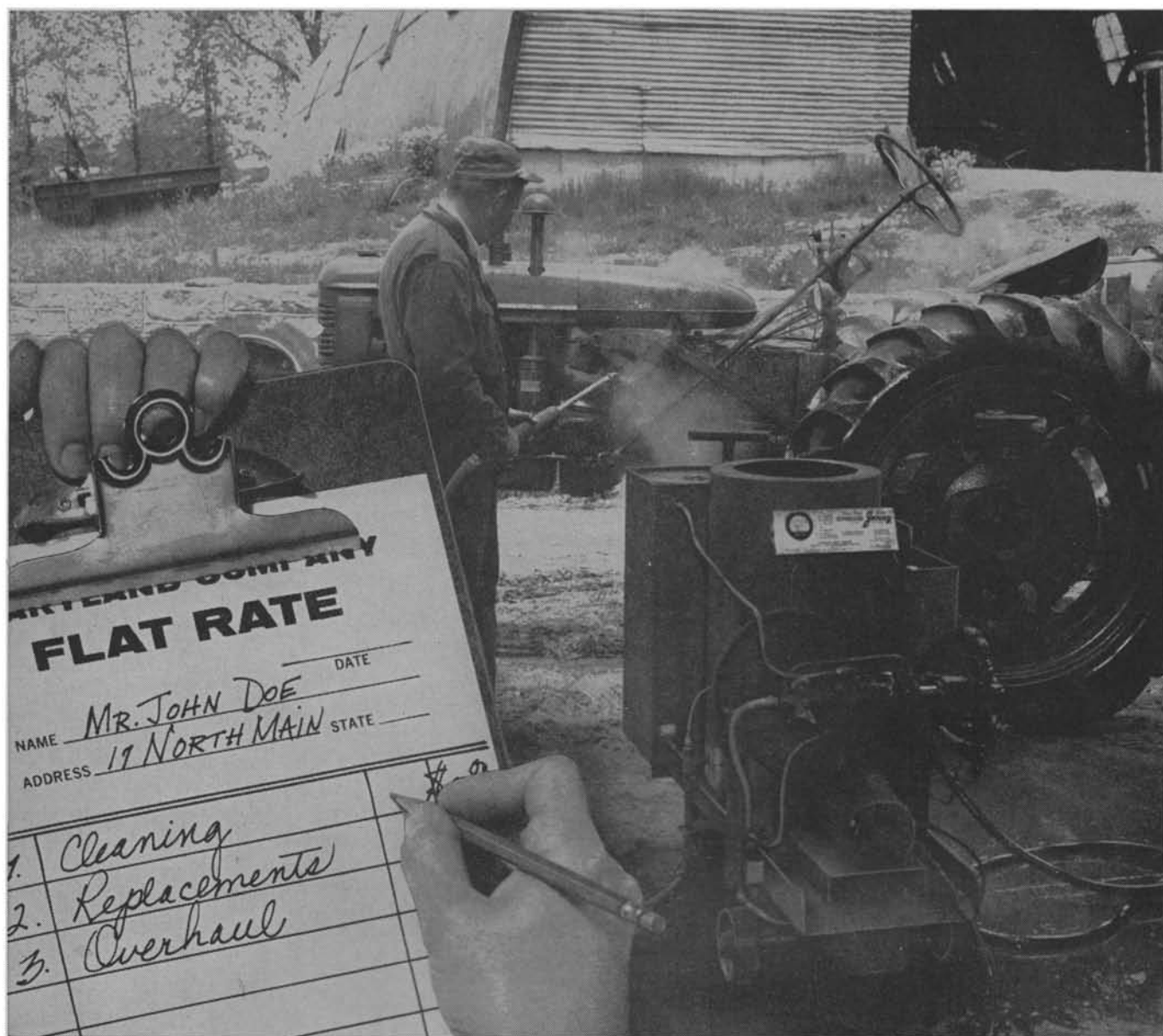
Condition classifications: EXCELLENT means—Engine: in perfect condition, 400 to 600 hours of use; Rubber: 80% tread remaining, no breaks or cracks; Paint: original and bright; General Appearance: excellent.

GOOD means—Engine: good running condition; Rubber: 70% tread remaining, no breaks or cracks; Paint: original paint or a good repaint job; General Appearance: good over all.

FAIR means—Engine: possibly in need of a minor overhaul to restore; Rubber: 60% tread remaining, some cracking evident in side walls; Paint: only fair, weathered and some rust apparent; General Appearance: worn, some dents, minor parts such as gage covers missing or broken.

ROUGH means—Engine: obviously in need of a major overhaul; Rubber: smooth; Paint: scarred, weathered, rusty, needs painting urgently; General Appearance: dents, ruptures, broken parts, loose wires, some components such as lights broken, missing or inoperative.

DEMONSTRATOR means—used for demonstrating only and in practically new condition.



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Farm Tractor Service Specifications

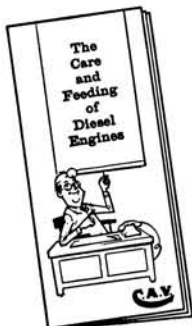
TUNE-UP SECTION — CURRENT PRODUCTION MODELS

TRACTOR		CARBURETOR OR INJECTION PUMP				DISTRIBUTOR				GOVERNED SPEED— (High Idle)				IGNITION OR INJECTION TIMING				SPARK PLUG		VALVE TAPPET	
Make and Model		Make	Model	Floet Setting (Inches)	Nozzle Opening Pressure	Make and Model	Point Gap	Crank Shaft	PTO Shaft	Static Timing	High Idle	Location	GAP	Int.	Exh.						
Allis-Chalmers																					
Series III, D10, D12..	Zen.	161J7		.....	.....	D-R 1112609	.022	2025	660	TC	25° B	Fly or C.P.	.025	.009 H	.015 H						
Series II, D15 Gas...	M-S	TSX-869		.25	.....	D-R 1112609	.022	2200	732	TC	25° B	Fly or C.P.	.025	.009 H	.015 H						
Series II, D15 LPG...	A-Bosch	CBM-100A-5510A		.....	.....	D-R 1112609	.022	2200	732	TC	25° B	Fly or C.P.	.020	.009 H	.015 H						
Series II, D15 Diesel...	Roosa	DBGFC-429-1AF		2000 psi.	.....	D-R 1112593	.022	2200	732	22° BTC	.....	Fly.	.025	.010 H	.019 H						
Series IV, D17 Gas...	M-S	TSX-871		.25	.....	D-R 1112593	.022	1975	657	TC	25° B	Fly.	.025	.013 H	.013 H						
Series IV, D17 LPG...	A-Bosch	CBM-100A-5496A		.....	.....	D-R 1112593	.022	1975	657	TC	25° B	Fly.	.020	.013 H	.013 H						
Series IV, D17 Diesel.	Roosa	DB		.....	2000 psi.	.....	.....	2000	666	16° BTC	.....	C.P.	.025	.010 H	.019 H						
D21 Diesel	Roosa	DBGFC-629-2AG		2750 psi.	.....	.....	.....	2400	1090	34° BTC	.....	C.P.	.025	.015 H	.015 H						
D21 Dsl. (Turbochgd.)	Roosa	DBGFC-629-25AG		2900 psi.	.....	.....	.....	2400	1090	34° BTC	.....	C.P.	.025	.015 H	.015 H						
One Ninety Gas...	Holly	1970		.....	.....	D-R 1112653	.016	2400	668-1125	.....	30° B	C.P.	.025	.020 H	.025 H						
One Ninety XT Gas...	Holly	1970		.....	.....	D-R 1112653	.016	2400	668-1125	.....	30° B	C.P.	.025	.020 H	.025 H						
One Ninety XT LPG...	Ensign	CBX-151		.....	.....	D-R 1112653	.016	2440	668-1125	.....	26° B	C.P.	.020	.020 H	.025 H						
One Ninety Diesel...	Roosa	DBGFC-637-13AF		2750 psi.	.....	.....	.....	2400	668-1125	28° BTC	.....	C.P.	.025	.015 H	.015 H						
One Ninety XT Diesel.	Roosa	DBGFC-637-31AF		2900 psi.	.....	.....	.....	2400	668-1125	26° BTC	.....	C.P.	.025	.015 H	.015 H						
J. I. Case																					
430 Diesel	Roosa	DB		.....	2250 psi.	A-L IAD6003-2J	.020	1750	.....	.....	.....	Fly.	.025	.14C	.14C						
440 Gas	M-S	TSX-635		.25	.....	A-L IAD6003-2J	.020	1925	.....	26° BTC	.....	Fly.	.025	.14C	.20C						
530 Diesel	Roosa	DB		.....	2250 psi.	A-L IAD6003-2F	.020	1900	.....	26° BTC	.....	Fly.	.025	.14C	.14C						
540 Gas	Zen.	267X8		1 3/4	.....	A-L IAD6003-2F	.020	2050	.....	.....	.....	Fly.	.025	.14C	.20C						
540 LPG	(Same as 540 Gas except uses Ensign 1 1/4 Xg. Carburetor)	DB		.....	2250 psi.	A-L IAD6003-2F	.020	2000	.....	8° BTC	.....	Fly.	.025	.14C	.14C						
630 Diesel	Roosa	267X9		1 3/4	.....	A-L IAD6003-2F	.020	2000	.....	.....	.....	Fly.	.025	.14C	.20C						
640 Gas	Zen.	PES		.....	2000 psi.	P-LIBT4403	.020	.....	.....	33° BTC	.....	C.P.	.025	.25C	.25C						
730 Diesel	R. Bosch	TSX-785		.25	.....	P-LIBT4403	.020	.....	.....	5° ATC	.....	C.P.	.025	.15C	.25C						
740 Gas	M-S	XG9262		.....	.....	P-LIBT4403	.020	.....	.....	5° ATC	.....	C.P.	.020	.15C	.25C						
740 LPG	Ensign	PES		.....	2000 psi.	P-LIBT4403	.020	.....	.....	29° BTC	.....	C.P.	.025	.25C	.25C						
830 Diesel	R. Bosch	TSX-785		.25	.....	P-LIBT4403	.020	.....	.....	2° ATC	.....	C.P.	.025	.15C	.25C						
840 Gas	M-S	XG9262		.....	.....	P-LIBT4403	.020	.....	.....	TDC	.....	C.P.	.020	.15C	.25C						
840 LPG	Ensign	PES		.....	2000 psi.	P-LIBT4403	.020	.....	.....	30° BTC	.....	C.P.	.025	.25C	.25C						
930 Diesel	R. Bosch	KG9320		.....	.....	P-LIBT4403	.020	.....	.....	.....	.....	C.P.	.020	.15C	.25C						
931 LPG	Ensign	KG9320		.....	.....	P-LIBT4403	.020	.....	.....	TDC	.....	C.P.	.020	.15C	.25C						
940 LPG Western Spec.	Ensign	KG9320		.....	.....	P-LIBT4403	.020	2150	1005	32° BTC	.....	C.P.	.020	.15C	.25C						
1030 Diesel	R. Bosch	PES		.....	2000 psi.	P-LIBT4403	.020	.....	.....	.....	.....	C.P.	.020	.25C	.25C						
1200 Diesel	R. Bosch	PES		.....	2000 psi.	P-LIBT4403	.020	2150	1075	31° BTC	.....	C.P.	.025	.020 H	.020 H						
Note: On Case-O-Matic models adjust governed speeds to: engine—2060; 540 rpm PTO—659; 1000 rpm PTO—1219. On Dual-Range models adjust governed speeds to: engine—1860; 540 rpm PTO—596; 1000 rpm PTO—1101.																					
Deere & Co.																					
1020 Gas	M-S	TSX-904SL		1/4	.....	PL-IBT4301B	.020	2680	547-1016	.....	24° B	C.P. or Fly	.025	.14C	.22C						
1020 Diesel	Roosa	DB		.....	2750-2850	PL-IBT4301B	.020	2650	547-1016	TC	.....	Fly.	.025	.14C	.18C						
2020 Gas	M-S	TSX-905SL		1/4	.....	PL-IBT4101S	.020	2680	547-1016	.....	24° B	C.P. or Fly	.025	.14C	.22C						
2020 Diesel	Roosa	DB		.....	2750-2850	PL-IBT4101S	.020	2650	547-1016	TC	.....	Fly.	.025	.14C	.18C						
2510 Gas	M-S	TSX-905		1/4	.....	PL-IBT4101S	.020	2680	698-1297	.....	(5)	C.P.	.025	.14	.22						
2510 Diesel	Roosa	DB		.....	2550-2650	PL-IBT4101S	.020	2650	690-1282	.....	.....	Fly.	.025	.14	.18						
3020 Gas-JD500	M-S or Zen.	USX-31		.....	.....	D-R 1112648	.022	2690	701-1301	.....	20° B(2)	Fly.	.025	.15	.28						
3020 LPG	Deere	.....		.....	.....	D-R 1112648	.022	2690	701-1301	.....	25° B(3)	Fly.	.015	.15	.28						
3020 Diesel-JD500	Roosa	DB		.....	2450-2550	D-R 1112624	.016	2650	690-1282	TC	.....	Fly.	.025	.18	.18						
4020 Gas-JD600	M-S	USX-30		.....	.....	D-R 1112624	.016	2440	694-1288	.....	20° B(4)	Fly.	.025	.15	.28						
4020 LPG	Deere	.....		.....	.....	D-R 1112624	.016	2440	694-1288	.....	25° B(4)	Fly.	.015	.15	.28						
4020 Diesel-JD600	Roosa	DB		.....	2450-2550	D-R 1112624	.016	2440	682-1267	TC	.....	Fly.	.025	.18	.18						
5020 Diesel	Roosa	DB		.....	2450-2550	D-R 1112624	.016	2440	1276	TC	.....	Fly.	.025	.18	.18						
(Note: High idle engine and PTO speeds listed in 540 PTO range without throttle over-ride) (2) 2200 rpm. (3) 2100 rpm. (4) 2000 rpm. (5) S mark. (To be continued)																					



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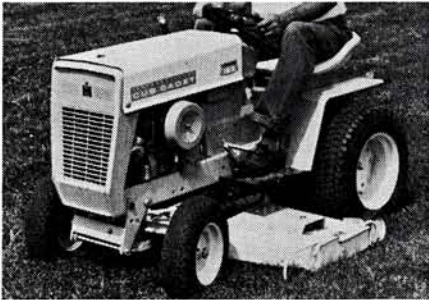
For More Details Circle (29) on Reply Card



what's new

IH 123 Cadet Tractor Has Hydrostatic Drive

Offering infinite speed control with one lever is the International 123 Cub Cadet tractor with hydrostatic drive introduced by International Harvester Co., 401 N. Michigan Ave., Chicago, Ill. 60611.



The tractor offers an infinite variety of speeds with only one hand lever control.

Forward, reverse and braking are controlled by means of a hand lever under the steering wheel. A slight move forward and the tractor can creep; pushed all the way forward, it travels up to 8 mph. The unit can be stopped by one of two means—depressing the brake pedal or by moving the hand lever to neutral.

Utilizing a radio piston pump and a piston motor, the hydrostatic drive works on a hydrostatic principle in which mechanical energy from the engine is changed to fluid energy (oil), then back to mechanical energy to drive the rear wheels.

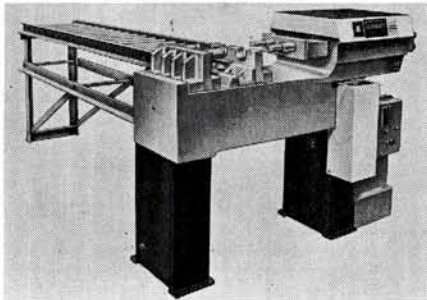
For More Details Circle (71) on Reply Card

Owatonna Tool Announces Hydraulic Track Press

A hydraulic track press, designed to provide a more economical means of servicing a variety of small and medium size crawler tractors with either flush-type or interlocking tracks, has been introduced by Owatonna Tool Co., 436 Eisenhower Drive, Owatonna, Minn. 55060.

With 60-ton capacity, the new model has sufficient hydraulic power to service tracks with 1 $\frac{3}{8}$ -inch diameter pins and 2 $\frac{1}{8}$ -inch O.D. bushings. Speed in servicing flush-type tracks is based on a design which permits removal and replacement of pins and bushings in two steps. Tooling required to service both interlocking and flush-type tracks by the conventional method of the large Trackmaster also is available.

A single lever controls operation of the Trackmaster 60 which automatically aligns tooling and track parts. Other features include fully-supported ram workhead and center saddle, removable rear abutment, and hydraulically-powered elevating table. Power



Other features of the unit include fully-supported ram workhead and center saddle.

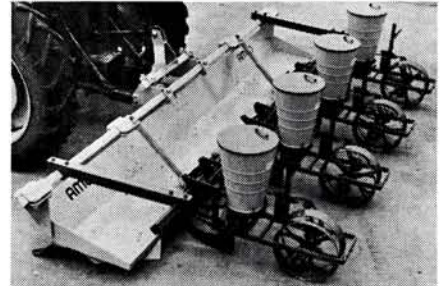
for the press and elevating table is supplied by two Vanguard 10,000-psi, two-stage hydraulic pumping units mounted in tandem on a 7-gal. reservoir. Press dimensions are 62 inches wide, 43 inches high and 22 inches deep; elevating table is 19 inches wide, 35 inches high and 78 inches long.

For More Details Circle (72) on Reply Card

Adjustable Bed Shaper Offered by Alexander

A bed shaper adjustable to form 12- to 18-inch bed tops has been introduced by Alexander Mfg. Co., P. O. Box 107, Yazoo City, Miss.

Additional holes may be drilled for



Bed shaper (shown with mounted planters) adjusts to form 12- to 18-inch bed tops.

narrower or wider tops when required for special conditions or crops. Precision-depth middles are maintained with replaceable buster shapes to insure uniform beds.

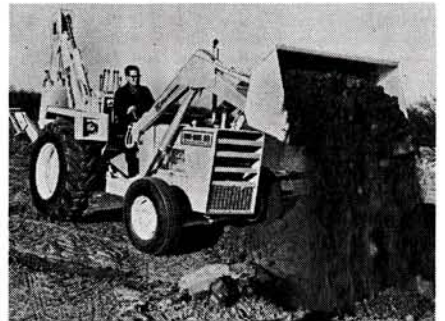
The bed shaper is also designed to work with the AMCO Uni-Vator, set for broadcast incorporation of chemicals or fertilizer.

For More Details Circle (73) on Reply Card

Parsons Uni-Hoe Features Unitized Construction

The Uni-Hoe 113 featuring unitized construction and a 13-ft. digging depth backhoe has been introduced by Parsons Div., Koehring Co., P. O. Box 431, Newton, Iowa. The backhoe loader weighs over 9,000 lb.

Features include the Pick-A-Pattern backhoe controls which permit the operator to adjust the levers to match different operating sequences without changing hoes. Standard equip-



Other features of the new Parsons Uni-Hoe include Pick-A-Pattern backhoe controls.

ment includes heavy-duty front axle with a static load capacity of 21,500 lb.; a 73-inch, $\frac{3}{4}$ -cu. yard, 4,000-lb.-capacity loader bucket; choice of 50-hp gasoline or 47-hp diesel engine and hydrostatic full power steering. The 113 has a telescoping steering wheel and a newly-designed operator's seat.

Transporting dimensions are 21 ft. 9 inches long, 9 ft. 9 inches high, and 7 ft. 7 inches wide across the stabilizers.

For More Details Circle (74) on Reply Card

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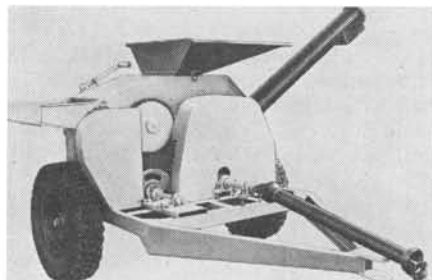
The Prestolite Company • Division of ELTRA Corporation, Toledo, Ohio 43601

For More Details Circle (30) on Reply Card

LT what's new (Continued)

Lickity Wood Chipper Developed by Piqua

Piqua Engineering, Inc., Piqua, Ohio, has introduced the Lickity wood chipper designed for farmers, fruit growers, and others who need to dis-



Available in two models, unit chips limbs and blows the chips to truck or container.

pose of brush and tree limbs up to 4 inches in diameter, or provide mulch and compost for their own use or for others.

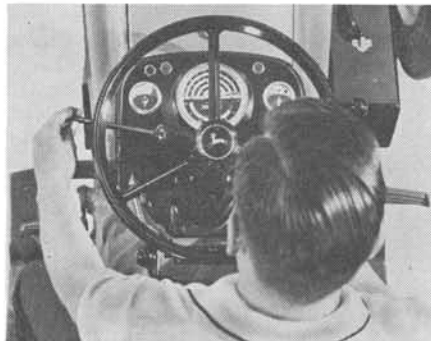
Two models are available. One operates from the pto of a two-plow tractor, or heavier; the other is operated by a 24-hp, Kohler four-cycle, two-cylinder, air-cooled gas engine. Either model will chip limbs and blow the chips to truck or container. The top hopper is used to make compost or potting soil.

For More Details Circle (75) on Reply Card

Hi-Lo Shift Option for John Deere Tractors

A new transmission option called Hydraulic Hi-Lo Shift, that is said to increase tractor pull-power 33 per cent and reduce ground speed 26 per cent, has been announced by Deere & Co., John Deere Road, Moline, Ill. 61265. It is available on the 1020 and 2020 tractors.

Advantages claimed for the Hi-Lo shift are that it eliminates the need to stop and downshift to pull a steep grade when plowing hilly fields; it saves time when operating pto-powered equipment in varying crop



Shift lever is located on tractor control panel immediately beneath steering wheel.

conditions; the operator can alter ground speed to match field conditions without reducing engine and pto speed, or stopping to shift gears; the engine can be used to slow heavy

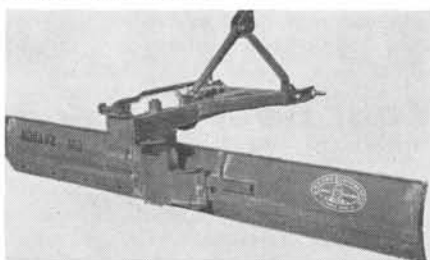
loads on downgrades. Hi-Lo Shift is controlled by a lever located beneath the steering wheel on the tractor control panel. The operator can shift from Hi to Lo with his fingertips without taking his hand off the steering wheel.

Hi-Lo is a shifting device made up of two hydraulically actuated clutches and a planetary gear set located ahead of the regular transmission. With lever in Hi, engine power flows to transmission in a straight line; normal pull-power and speed ranges are obtained. Shifting to Lo transfers power through the planetary gear reduction, increasing the pull power and reducing the ground speed.

For More Details Circle (76) on Reply Card

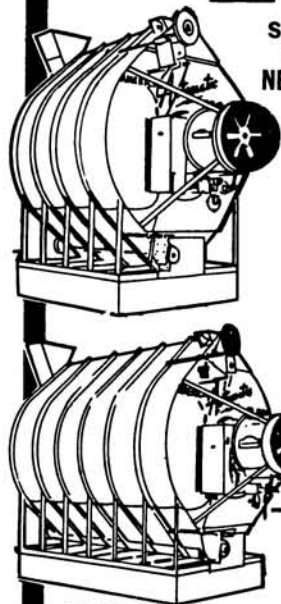
Mohawk 10-Ft. Moldboard For Model 160 Blade

Mohawk Equipment Co., Box 3605, Temple, Tex. 76051, has developed a 10-ft. moldboard for its heavy-duty model 160 blade.



Mohawk's heavy-duty model 160 blade is available with 7-, 8- or 10-ft. moldboard.

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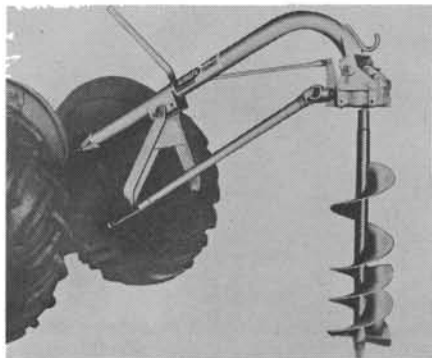
For More Details Circle (32) on Reply Card

The 160 is now available with 7-, 8- or 10-ft. moldboard and is fully adjustable to tilt and offset, in any one of seven forward or seven reverse positions. It is recommended for all heavy jobs and larger tractors.

For More Details Circle (77) on Reply Card

New Post-Hole Digger Added to Schultz Line

The series 100 post-hole digger, designed to bore post-holes to depths of nearly 4 ft., is being offered by L. H. Schultz Mfg. Co., Rochelle, Ill. 61068.



The new unit is a heavy-duty power-auger that bores post-holes almost 4 ft. deep.

In addition, the series 100 quickly converts to an efficient, all-purpose crane for lifting/carrying jobs around the farm. The rugged unit is engineered for power and speed, and handles easily from the tractor seat.

The model is available with a choice of 6, 9, 10 or 12-inch alloy-tough augers.

For More Details Circle (78) on Reply Card

Crisafulli Introduces High-Capacity Pump

A pto-operated, high-capacity pump, model CP, has been announced by Crisafulli Pump Co., Inc., Box 1051, Glendive, Mont. Designed for irrigation, drainage, flood control, water loading, etc., the model is available in 4- to 16-inch sizes. In operation, the entire unit is backed into the water and pumping is started.



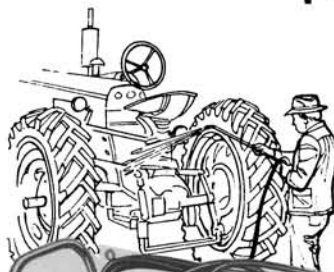
Pump has all steel parts, water-lubricated rubber bearings, and butyl discharge tube.

The pump features a simple, quick hook-up for immediate pumping; all steel parts; water-lubricated rubber bearings; butyl discharge tube; and capacities of 500 to 800 gpm.

For More Details Circle (79) on Reply Card

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For More Details Circle (35) on Reply Card

LT what's new (Continued)

Ford Offers Model 630 Self-Propelled Combine

Ford Motor Co., U. S. Tractor & Implement Operations, 2500 E. Maple Road, Birmingham, Mich. 48012, has announced the model 630 self-propelled combine.



Grain headers for the self-propelled unit are 10, 12, 13, 14 (shown here) and 16 ft.

The unit has a standard grain tank capacity of 77 bu., which reportedly can be emptied at a rate of one bushel per second. Cylinder length is 49 inches, the separating area is 7,209 inches, and the cleaning area is 4,768 sq. inches. Grain headers are 10, 12, 13, 14 and 16 ft. Available four- and three-row corn heads for narrow and wide-row corn accommodate 28- to 34-inch or 36- to 42-inch spacing.

Additional features include standard 79-inch rear tread; hydrostatic power steering; built-in, extra-strength frame and axle; three forward speeds and one reverse; ground speeds from 1.06 to 11 mph; individual brakes; tilt steering wheel for stand-up operation; and parking brakes. The 630 has a single-lever, multiple hydraulic control on the centered platform for ground and cylinder speeds and for header and reel height adjustments.

The 630 is available with a choice of Ford 300-CID gasoline or 363-CID diesel engines, both rated at 2,200 rpm and capable of delivering 105 hp.

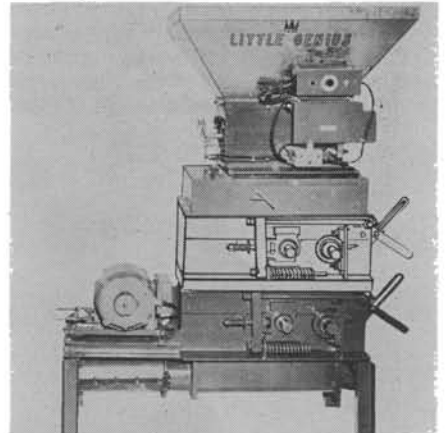
For More Details Circle (80) on Reply Card

Roller Blender by Wyatt Has Two Sets of Rolls

A compact, self-metering roller mill, said to be capable of proportioning two different grains while processing each through a separate set of rolls has been announced by Wyatt Mfg. Co., Inc., 501 N. 5th St., Salina, Kan. 67401. Called the Little Genius Two-In-One roller blender, the unit is designed with two sets of rolls that can be operated together or independently of each other. The second pair of rolls is set directly above the first, eliminating need for additional floor space.

Supplement can be bypassed around the rolls while corn is processed through both pairs of rolls, increasing milling capacity up to 17 tons per

hour, the manufacturer states. Ingredients may be metered without being rolled. Extra ingredients can be added via an optional Auto Meter which is installed on the discharge auger. Rolls can be adjusted individually by use of cam-lock levers which can set the rolls for cracking or crimping and flaking.



The new mill is designed to proportion and roll two different grains simultaneously.

For the bigger operator, a 17-ton-per-hour capacity is available by using 18-inch rolls and 10-hp motor. With a smaller unit, the 9-inch rolls and 3-hp motor will produce 5 tons hourly. Various capacities in between are possible with different combinations of motors and rolls.

For More Details Circle (81) on Reply Card

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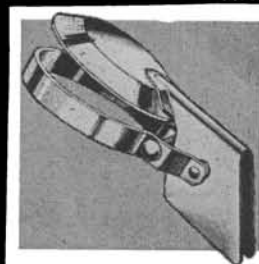
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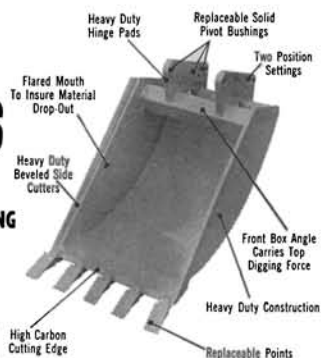
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All with exclusive Touch-O-Matic control. You can inch along in forward and reverse — easing the Sno-Away through deep drifts without affecting engine or auger speeds. Release the Touch-O-Matic lever, and the unit stops instantly — important safety-selling bonus.

More blizzard-busting convenience. Sno-Away engines are winterized to start and run in sub-zero temperature. (6 and 7 hp models are available with electric starting.) Transmissions provide *all-gear* reliability. Adjustable guide wheels insure clean sweeps. Conveniently placed snow-chute directional control is standard.

Like what you see? Look into the profit opportunities offered by Simplicity. Get all the facts by writing Simplicity Manufacturing Co., Inc., 6806 Spring St., Port Washington, Wis. 53074

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For More Details Circle (39) on Reply Card

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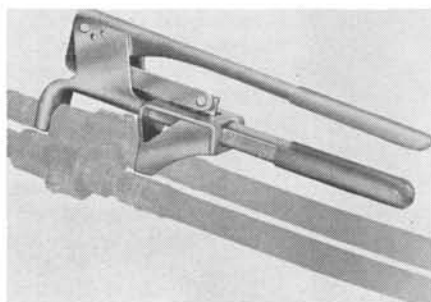
Manufactured by AG-TRONIC, INC. Dept. IT
P.O. Box 36, Hastings, Nebraska 68901

For More Details Circle (42) on Reply Card

IT what's new (Continued)

Powerhand Announces Tool for Recoupling

A tool designed for fast, sure recoupling of hydraulic quick couplers when pressure is trapped in the lines has been developed by Powerhand, Inc., P. O. Box 6294, Minneapolis, Minn. 55424.



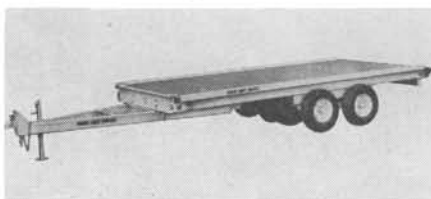
Model 3000 is recommended for use on pipe thread fittings in the 1/2-inch NPT range.

The unit snaps quick couplers together with simple leverage; reconnects under pressures to 1,500 psi. It is adjustable to fit most couplers in use. Model 3000 (illustrated) is recommended for use on break-away clamp hookups and on all pipe thread fittings in the 1/2-inch NPT range. The unit is plated to withstand weather.

For More Details Circle (82) on Reply Card

Flat Deck Trailer Offers Double Hauling Capacity

Stone Fabricators, Inc., 39 E. Main St., Honeoye, N. Y. 14471, is offering a 12-ton Load Chief trailer designed to double hauling capacity while saving labor and expense of extra trucks.



The Load Chief has electric brakes on all wheels and safety chains with grab hooks.

The Load Chief series offers 132 sq. ft. (16 1/2 ft. x 8 ft.) of deck area, plus a 5-ft. 10-inch tongue, to permit safe moving of long objects with minimum rear overhang. The flat bed design makes loading manually, or with hand truck, fork lift or crane, quick and easy. Side protective rails can be installed lip up to prevent slip-offs, or lip down to facilitate loading with a fork lift.

The series is available in three models—806, 809 and 812, with 6-, 9- and 12-ton capacities respectively. All are identical in size and construction except for number of axles, making them convertible to meet changing requirements. Other features include high tensile, 12-ton carrying members; 33-inch high deck of treated tongue and groove wood planking; electric brakes on all wheels; safety

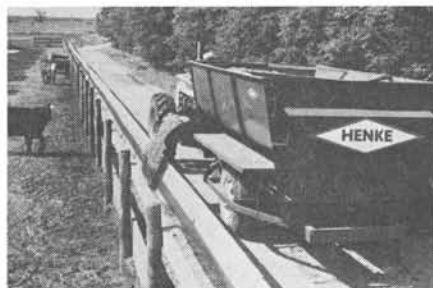
chains with grab hooks; 5000-lb. tongue jack; five-position hitch with choice of ball or eye; lash rings; clearance lights; and stop tail and turn lights.

For More Details Circle (83) on Reply Card

Henke Introduces New Self-Unloading Wagon

A self-unloading wagon named the Kwikmixer is being offered by Henke Machine & Mfg. Co., Columbus, Neb. The unit is designed to blend, mix and unload complete rations for cattle in one operation. The cattle are fed in three to five minutes.

Unloading is hydraulically operated. A variable speed conveyor keeps mixed feed flow constant. If the conveyor becomes clogged, it is said to



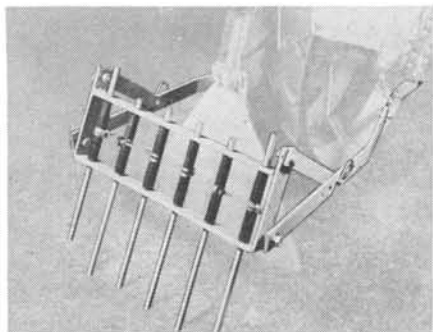
Features include variable speed conveyor to provide a constant flow of mixed feed, stop automatically without damage to the unloading mechanism. Three capacities are available: 160, 190 and 300 cu. ft. in truck, stationary or feed-lot models.

For More Details Circle (84) on Reply Card

Comfort Introduces New Herbicide Incorporator

A self-cleaning, spike-tooth incorporator which can be used on all types of press wheel planters to give controlled mixing of granular or liquid herbicides into the soil has been developed by Comfort Equipment Co., 2609 Walnut, Kansas City, Mo. 64108.

The teeth are made of high-carbon steel, and reportedly will conform to the track made by any type press-wheel in loose soil. Easy adjustment is designed to provide controlled incorporation to any desired depth.



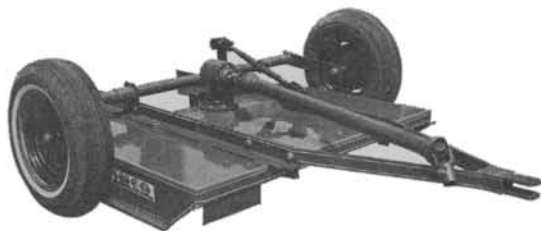
Features include easy adjustment to ensure controlled incorporation to desired depth.

Designated the model M-140, the incorporator can be installed on any make planter.

For More Details Circle (85) on Reply Card

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New mounting bolt positively locks free swinging, heat treated, spring steel cutting blades. Hinged guard on right front side protects operator and tractor tires. Adjustable to any cutting height. Borg-Warner gear box—more than ample for 5' cutter. New re-enforced one-piece construction of $\frac{3}{8}$ " material gives maximum structural strength. Shielded P.T.O. Shaft. It's easy for dealers to increase profits by selling IMCO's Top Value at a Fair Price. Other Famous IMCO Products: wheel-mounted disc harrows, fold-over harrows, rear blades, landscapers and rear scoops.

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'LOD-MOR' BALE LOADER



Handles all bale sizes, under all haying conditions, on level or hilly ground, no tie breakage. Performance guaranteed.

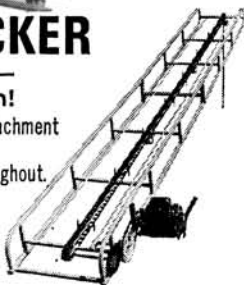
- Factory-sealed ball bearings.
- 2 heavy duty Caster Wheels (3" x 8"), offset to keep front end of loader level.
- Fast, trouble-free hookup, release.
- Positive bale pickup mounted on sealed ball bearings.
- Low side for ease in loading bales on truck.
- Adjustable height.



BALE STACKER

**Lightweight and Portable —
Easily Handled by One Man!**

- No. 45 detachable chain w/double lug attachment links.
- Factory-sealed flange type ball bearings throughout.
- Roller chain and Sprocket reduction drive.
- Adjustable motor mount gas or electric motor.
- Automatic spring-loaded chain tightener.



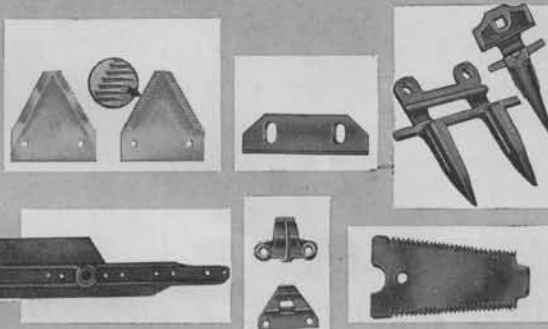
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If you're not selling WHITAKER up-to-date equipment, see your local WHITAKER wholesaler if there is one in your territory. If you don't know who he is, write us, we'll gladly put you in touch with him.

Know the advantages of selling top quality, precision-made materials, the kind that keeps them coming back, the kind that WHITAKER supplies the original equipment manufacturer.

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on which
to...**

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SNOWCO
POWER-FLO 8
with transfer case,
center drive

Snowco 8" augers — in 40', 45', 52' and 57' lengths — are unequalled for stability; unsurpassed for capacity and trouble-free service.

Take Stability: High lift, A-type transport with 94" wheel tread and stabilizer bar. Transport made of 2" x 4" rectangular tubing for greater strength, less weight / Long adjustable truss rods over high, wide bridge control tube side sway and sag.

Take Capacity: Up to 3,000 bushels an hour / long overlap on transfer case to keep grain flowing smoothly / designed for handling high moisture grain.

Take These Other Superior Features: Double flighting on intake end / Center drive minimizes working parts / Release gate at discharge end to eliminate danger of plugging / Gas engine, electric motor or PTO drive.

Also 4", 5" and 6" augers;
write for complete information.

THE SNOW CORP.

4361 McKinley, Omaha, Nebraska 68112

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**'... Some equipment needs for
parks and recreation work ...'**

IEMC starts on page 35

quite well met here, with one exception which I will mention later, but I am sure refinements with larger and better units will be developed.

"There are also other classes or types of equipment in which park and recreation needs have had an influence, such as litter collection or "litter picking," and in which the needs are only partially met. Then we have a case or two in which equipment has been specifically designed and manufactured for our needs, such as beach cleaning equipment, but here again the complete answer to our problems has not been produced.

"In some cases and with an occasional manufacturer, we have been able to get adaptations or modifications built into the equipment they manufacture to better meet our needs, for example, regarding the Authority's needs, Lodol's solid waste collection system and John Bean's potato harvester for beach cleaning.

"A few of our equipment needs (in many cases these would have even a broader application than in the park and recreation service):

"1. Mowers for steep-slope mowing (LCG and right-of-way types have helped but are not the total answer.)

"2. Litter collections. In the continuous pickup of litter, leaves, grass clipping, etc., there is a reasonable amount of equipment to select from. It is in the intermittent-type pickup with bagger, baler or some type of packaging, that equipment is needed

for the roadside pickup and then again a type that could be used on steep slopes, also a sweeper between the size of present industrial units and the municipal street sweeper, with possibly 1-1.5-yd. capacity.

"3. Spraying equipment: The 3-section, flexible sprayer boom manufactured in a hydraulic actuated type for herbicide applications.

"4. Beach cleaning: A unit combining digger agitation, digging elevating screen, shaker screen and mechanical or hydraulic loading of debris into a removal vehicle.

"5. Nursery root pruner: A unit that might travel 26 to 30 inches deep and undercut at least 24 inches.

"6. Utility wheel tractors: A good canopy type cab, fixed type windshield with wiper and rollup curtains. (Congratulations to Wain-Roy Corp.) A conventional-size utility tractor, 50 to 56 hp, with all-wheel drive.

"7. Tires: An all-purpose utility type tread in many of the 28-inch sizes, especially in the 12.4-28 and 13.6-28 sizes. Rubber manufacturers should assume responsibility for providing capping service available in any of the sizes they produce.

"Large-scale, commercial users of powered equipment, such as parks and recreation work represent, need up-to-date service and shop manuals. We're not trying to compete with your dealers, but we shouldn't have to run to the dealer for every little item or service. Accordingly, I suggest that we in park and recreation authorities be placed on your mailing lists for all service and shop bulletins covering the equipment we operate." □

**Seilon Makes Changes
In Ag Division**

Edward Lamb, president of Seilon, Inc., Toledo, Ohio, has announced that L. M. Cooley, executive vice-president, Agricultural Equipment Div., has recommended the election of Wendell W. Brown as group vice-president, Agricultural Equipment Div.

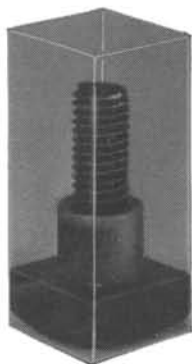
Brown will also become vice-president of the Lockwood Div., Gering, Neb.; Thomson Machinery Div., Thibodaux, La.; Thomson Pro-Weld, Kingston, Jamaica; and Talleres Vera Cruz, Vera Cruz, Mexico.

Thomson manufactures mechanized sugar cane equipment. Lockwood manufactures equipment for potato and other vegetable crops.

Brown has been general manager of the Lockwood division for several years. His new duties will include supervision of domestic and overseas activities of the Agricultural Equipment division.

Fred W. Schneider becomes vice-president and general manager of Lockwood. New duties will include staffing and construction of a new Lockwood plant at Gering. John J. Ellis was also named plant manager for Lockwood.

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60% less metal! 75% less machining time! A stronger bolt at LESS cost! That's what Tru-Fit's engineering design and cold-heading know-how SAVED on this special square-head round-shouldered machine bolt. Formerly screw-machined out of 1 1/2" square stock, Tru-Fit cold-heads it out of 3/4" rod, roll-threaded and completely stress-relieved after cold-heading. Made faster, better, more economically the Tru-Fit way!

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Maintaining contact with leading auctions from all over the country, I&T brings you a regular monthly report on used equipment prices.

From feedlot to factory, your best source for business information on the farm equipment industry is IMPLEMENT & TRACTOR. Now in its 82nd year, I&T comes to you twice monthly plus annual I&T PRODUCT FILE and RED BOOK issues.



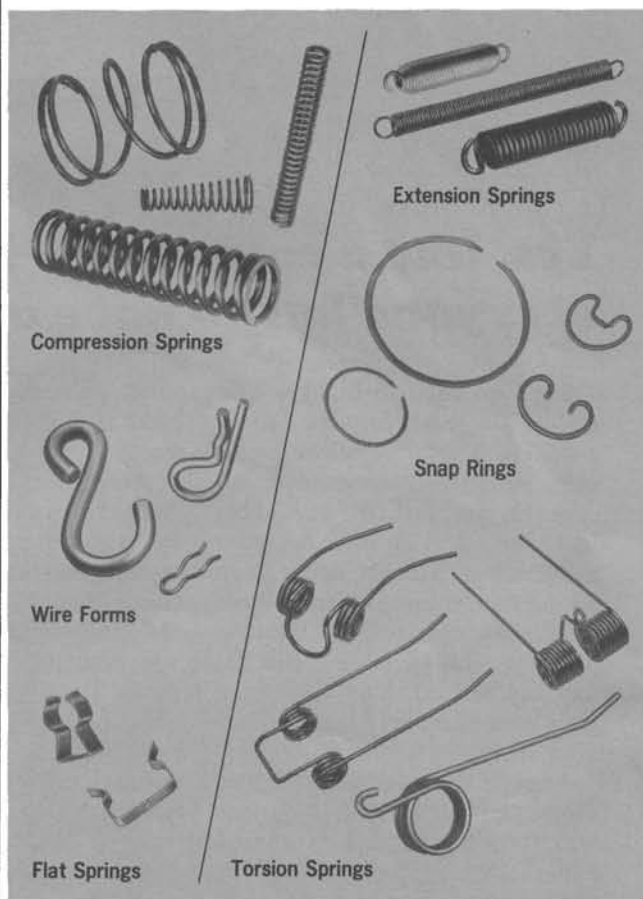
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Serving Industry Since 1923

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**"...did you say
there is going to be
a price increase for
I&T Shop Service?"**

**Yes, like a cold...
everyone has to have one from time to time.**

There's no need to build a case about rising costs for you. This is a daily problem for all businessmen. And there seems to be no cure. So, we face the inevitable I&T Shop Service price increase as calmly as we can. It has been a long time coming. Management steadfastly refused to increase prices several years ago. But the day has arrived. Can we expect your understanding . . . even your sympathy?

Look at the bright side. In past years, you felt I&T Shop Service was worth the original investment and the annual renewal fees for supplement service. Isn't it worth even more today? As the complexities of tractor service increase, so does the need for comprehensive, authoritative, service information on all competitive makes/models.

This is I&T Shop Service's role. The only universal reference

work published on service procedures for all wheel-type farm tractors.

And it's a big job . . . some critics say we're a little slow. Perhaps so. But, you expect everything in those service manuals (more than 57 in number) to be absolutely right. Accuracy is what you demand. Accuracy takes time. Time to tear down . . . time to write . . . time to study . . . time to rewrite . . . time to await all "factory" modifications.

Time to be right is a critical factor for the editors of I&T Shop Service. They feel the added time to be right is a better compromise than "speed of publication" and the consequence of a high error ratio.

As a continuous subscriber, you know you will get all the facts in due time. I&T Shop Service remains the only source for service information regardless of make or model. At any "reasonable price", it is a sound investment.

New Price Structure

	New Price	Old Price
Master I&T Shop Service Set	\$59.50	\$54.50
One-Year Supplement Service	\$17.50	\$15.00
Two-Year Supplement Service	\$30.00	\$25.00

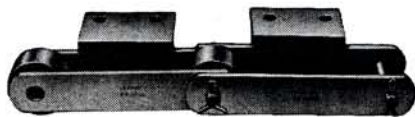
(Price change effective August 1, 1967)



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Oh how we have chained things.

From the blacksmith to the engineer. And from the blacksmith shop to the plant. Jeffrey has come a long way to improve the quality of chain. Our engineers, today, are design specialists, ready to work with you in making a chain that isn't overdesigned. This means less maintenance. Because our plant is so modern, it allows production of the highest quality chain at an economical cost. And because of



these modern methods, Jeffrey gets chain on the way to you faster.

Not only has Jeffrey learned ways of working better with steel and alloys but has continually developed new chain, utilizing other materials of construction for special applications such as non-

sparking, non-magnetic and light weight.

Oh, yes. We sure have chained things. To find out more about us, our methods, and our chain, contact your nearest Jeffrey distributor or write The Jeffrey Manufacturing Company, 834 North Fourth Street, Columbus, Ohio 43216.



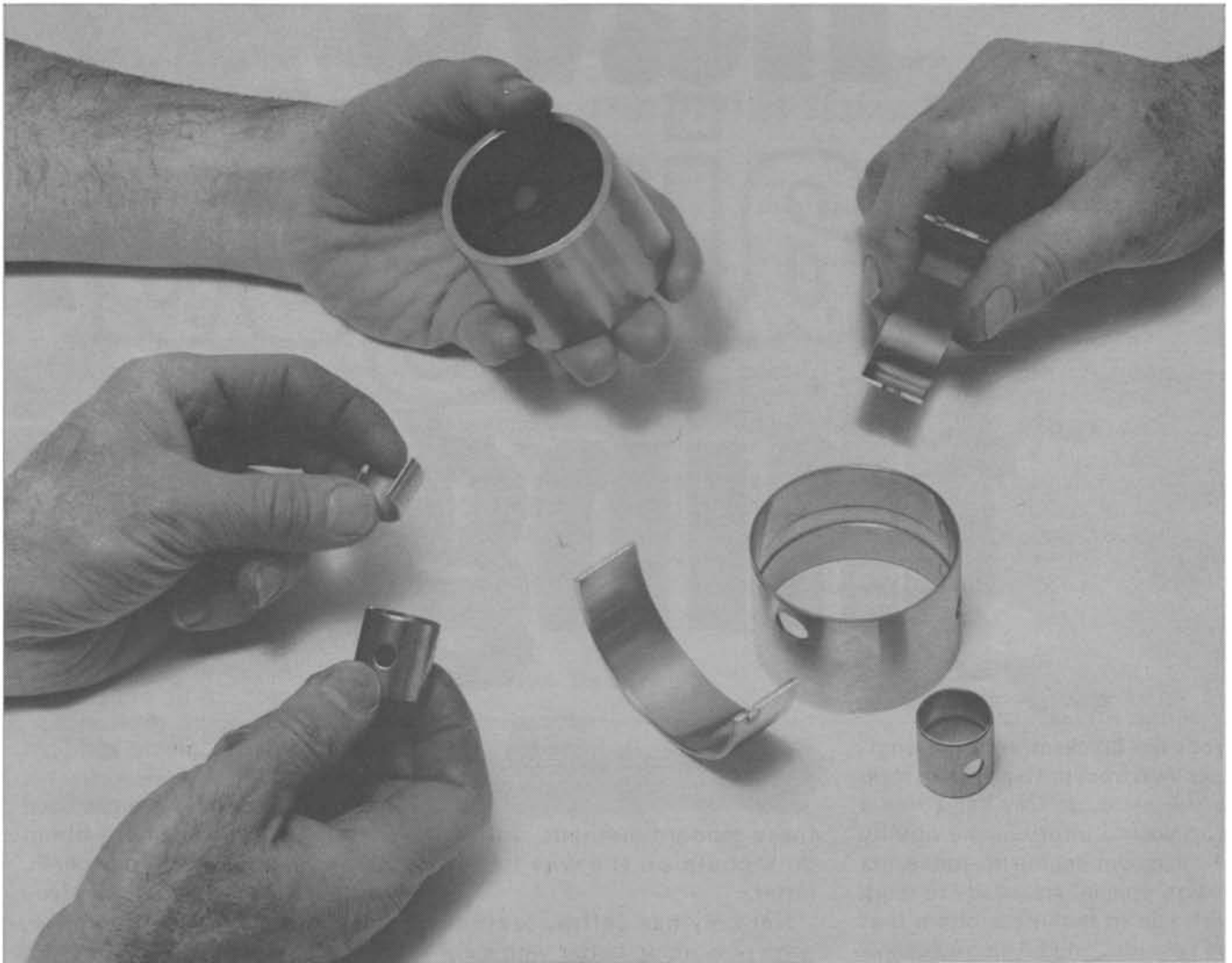
A-200 heavy-duty bearings!

Tough enough to make a Federal-Mogul customer out of anyone.

If you've been looking for heavy-duty bearings, we can turn you into a Federal-Mogul customer faster than you can say A-200. We've done just that with a manufacturer of high performance automobiles. With a manufacturer of heavy-duty diesel engines, too. And with plenty of others.

Consider all that A-200 heavy duty bearings have to offer: extra-high load capacity. High heat conductivity. High corrosion resistance. Superior fatigue strength at elevated temperatures. All with a backing of either low carbon or low alloy, high strength steel. *Plus* the design freedom to choose straight or flanged half bearings, both to SAE design standards.

See? You're beginning to look more like a Federal-Mogul customer already. Why not write us for complete details. Federal-Mogul Div., Dept. 127, Box 1966, Detroit, Michigan 48235.



**FEDERAL-MOGUL DIVISION
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**IS THIS NEW
DRAPER CHAIN
TOO GOOD
FOR YOU
?**

You be the judge. It's a marvel of performance! All-new design gives this *precision* conveyor chain many times longer life than older types of draper chain. Far smoother operation, too. Think of the extended service it will give your implements. The savings in field downtime and chain replacement costs. Better customer relations.

Is it too good for your equipment? Not at all. Many manufacturers tell us it's what's been needed. Now it's here...proved by over three years of testing on sugar beet, potato and tomato harvesters.

This big step ahead in draper chain (patent pending) operates on the same cast tooth sprockets as now used. No machine alteration is required. And, this chain features easy field replacement if necessary.

This new development is a runaway success in draper chain applications—the chain that farmers will be looking for on their new implements.

It's the newest member of the complete family of implement chains, universal joints, knives and blades offered in the industry's *big* line—REX.

For full information, get REX Draper Chain bulletin 6682. REX CHAINBELT INC. Dolton Division, 13943 Park Avenue, Dolton, Illinois 60419.

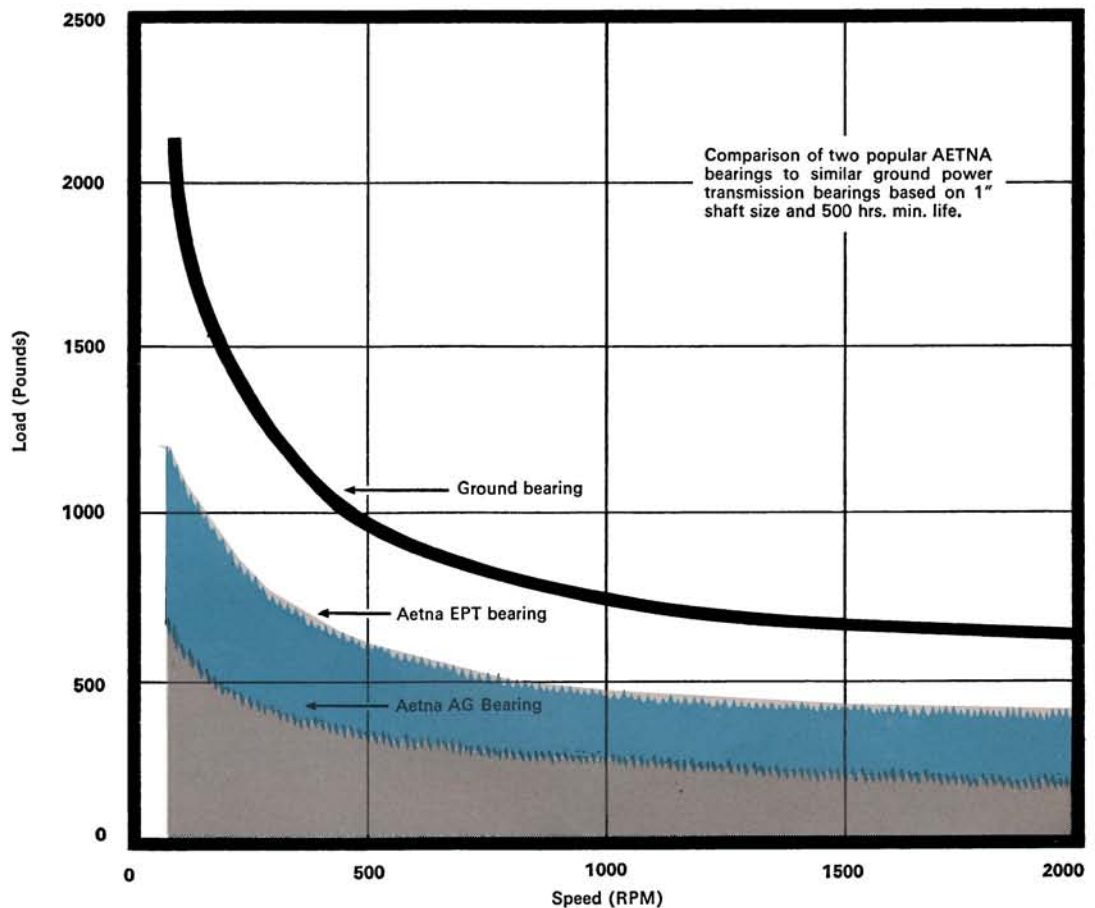
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INDUSTRY'S HELPING HAND

O.K. A standard bearing fits...but it may cost you more

Check this chart



The chart compares a 1" bore, ground power transmission bearing against two popular Aetna bearings, the EPT (Economy Power Transmission) and the AG (Agricultural type). What the chart proves is that a lot of people pay extra for rating that they do not use.

Check the chart carefully. If your application falls in the colored area, you may save 14% or more by using Aetna's Economy Power Transmission Bearing. If the load and speed characteristics of your application fall in the gray shaded area, you may save 33% or more on your bearing costs by using an Aetna AG Bearing. Similar savings can be made on other bore sizes.

A ground power transmission bearing is designed

and built to perform at high loads and speeds. If bore size, rather than rating is determining your bearing selection, why pay more for this excess rating?

Interested? Then, tell us your bore size, load, speed and application—and we'll tell you which Aetna bearing to test—and we'll supply free samples too!

Write: Aetna Bearing Company, 4600 W. Schubert Ave., Chicago, Illinois 60639.



AETNA BEARING COMPANY

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A **textron** DIVISION

IMPLEMENT & TRACTOR

Deere's 1st-Half Net: \$34 Million

Deere & Co. has reported that worldwide sales set an all-time high of \$543 million in the first six months of its 1967 fiscal year, but net income was lower than last year's record high.

For the six-month period ended April 30, sales were seven per cent higher than the \$508 million in the first half of 1966. Net income was \$34.2 million compared with \$39.1 million a year ago.

For the second quarter, sales were \$317 million compared with \$310 million last year, and earnings were \$18.9 million, compared with \$26.3 million in 1966.

Chairman William A. Hewitt said net income in the U.S. was larger than a year ago but did not increase in proportion to sales. Sales were up eight per cent in the United States, up four per cent overseas, and down ten per cent in Canada.

"Net overseas losses were higher mainly because of the recession in Germany, which caused a decline in demand, and by the large devaluation of Argentine currency," he said.

Hewitt said future production schedules, which already have been reduced for a few products, will depend on the strength of retail demand since dealers' inventories now are substantially higher than a year ago.

"This year's retail sales in North America were almost equal to last year's record high when economic and weather influences were exceptionally favorable," he said.

"The basic economic factors related to our business are encouraging. Farm cash receipts are expected to be slightly higher this year and the outlook for the construction industry has improved. In addition, the probable reinstatement of the investment credit may have a favorable influence on retail sales, particularly in the latter part of the year."

Farm Electrification Conference to Dallas

To "switch on tomorrow's agriculture" to the benefits of electricity, the National Farm Electrification

Council will hold a four-day conference in Dallas, August 29 to September 1.

The conference is being held for more than 500 persons employed by electric power companies furnishing power to U.S. farms and is an attempt to point out ways of communicating electrical benefits to farmers, according to Albert V. Hartl, chairman of the FEC.

The program will include four seminars on irrigation, crop conditioning, poultry brooding and marketing management. Thirty-five exhibits, including a battery-operated tractor, will show latest innovations in electrical equipment for the farm and for rural homes.



NOW—REPLACE OLD OR NEW HYDRAULIC CYLINDERS AT HALF THE COST

DURST RATCHETING JACK

- **CAPACITY—Big** 6000-lb. push; 12,000-lb. pull.
- **STROKE—Standard** 8" max.; 20" closed length.
- **MOUNTING—Easy** 1" pin with standard steel clevis.
- **FEATURES—Quality** Malleable housing; 1 1/2" Machine Acme Thread Screw.
- **AVAILABILITY—Immediate** Any quantity from stock... unpainted... bulk pack.
- **COST—Low** Less than 1/2 the price of any comparable stroke 2" D.A. cylinder.

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Lockport Gasket Racks

Keep Gaskets in Order for Easy Access
Pays for Itself in One Year

Designed Especially for Implement Dealers

Yes, the Lockport Gasket Rack will pay for itself in one year. This heavy gauge steel filing system will end the trouble of torn and misplaced gaskets. Saves valuable floor space and keeps gaskets orderly and instantly accessible. Insures inventory on all sizes and models of gaskets.

New model measures 35" wide, 32" deep, 40" high with 11 drawers. Designed for use individually or in combination — they stack perfectly. Buy 1 or 2 now and add others as you need them. Removable drawers are interchangeable, but are hinged to prevent being pulled out accidentally. Write for literature and low prices on this shop necessity.

NOW! NEW PEGBOARD DRAWER BOTTOMS.

Lockport Steel Fabricators, Inc.

P. O. Box 67

Lockport, Illinois

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'... Remarks from educators on where their graduates go ...'

TRAINING MECHANICS

(starts on page 26)

Richard E. Geyer, a free-lance writer on education topics who put this directory together, suggests that readers check with their local state employment service office, state MDTA coordinator, or farm labor coordinator. New programs start frequently though some apparently are intended only to teach farm workers how to use and maintain machinery.

The directory also omits training programs at secondary school level.

What comments do the teachers

and administrators of these training programs have concerning the placement of their alumni?

Here are a few:

Georgia: "Since the program began in 1958, 114 men have been placed in the farm equipment business: 58 in dealer service work, 20 in parts, 12 in sales; six are owners or part owners of dealerships. This accounts for about 70 per cent of the program's graduates."—Prof. J. G. Chambliss, Abraham Baldwin Ag. College.

Illinois: "One hundred per cent of our graduates are in the farm and light industrial equipment area."—James F. Nickell, Supervisor of Ag. Education, Danville Jr. College.

"About 80 per cent employed in farm equipment repair or rural and semi-rural shops. We encourage employment in farm machinery industry."—W. G. Dubuque, Pres., Quincy Technical Schools.

Iowa: "Opportunities limited; servicemen's wages low."—Roger Holcomb, Ag. Coordinator, North Iowa Area Community College.

Kansas: "Not enough shops paying incentive in this region, but it is not a decisive factor. Projected graduates 12 or more per year from 1969 on. We expect that 50 per cent will be available for the industry."—Howard N. Acott, Dir. Ag. Technology, Dodge City Community Jr. College.

Kentucky: "We have not yet graduated men from this program. We are confident that a great need exists for persons with training such as we offer and that a great percentage will be employed in farm and light industrial mechanics. With such training, movement into managerial situations is expected."—Dr. Glenn Hayes, Eastern Kentucky U.

Massachusetts: "Fifty per cent of graduates go into repair of machinery. Twenty-five per cent go into opera-

Ford Market Planning Post to R. J. Camp

Robert J. Camp has been appointed equipment market planning and analysis manager for Ford Tractor division after having served as marketing research and competitive analysis supervisor for the division's U.S. Tractor and Implement operations.

Camp now has the market plan-

ning and analysis responsibility for Ford's worldwide line of agricultural implements, industrial equipment and industrial tractors. He joined Ford in 1958 as a marketing research analyst, before which he was a market researcher for Massey-Ferguson Ltd. at Racine, Wis., and Toronto, and a sales and distribution representative for the John Deere Co. in Lansing, Mich.

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PRODUCTS WITH MORE USEABLE FEATURES THAT SELL FASTER AND BUILT TO LAST HAVE MADE THE MOHAWK LINE A FRONT RUNNER.

ROTARY CUTTERS

7 Models to Choose From
A Size to Fit Your Area
and Available Tractors



CHECK THESE OUTSTANDING FEATURES:

- All Welded 1-Piece Framework
- Heavy Duty Needle Bearing U-Joints
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Other famous Mohawk Products: Rotary Cutters, Tool Bar Accessories, Chisel Plows, Bedders.



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Berkeley House, Burwell, Cambridgeshire, U.K.

All Types of Secondhand Agricultural Machinery and Contractors. Plant Available for sale from Stock.

FORDSON: All Models 1952 to 1966.

MASSEY-FERGUSON: All Models 1952 to 1966.

INTERNATIONAL; DAVID BROWN; NUFFIELD, CATERPILLAR. County 4 Wheel Drive.

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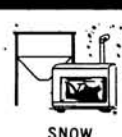
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tion, and 25 per cent do not stay in the field more than one year."—Charles W. Jones, Norfolk County Ag. School.

Michigan: "Eight per cent of the graduates are working in the industry. We could use 100 graduates per year; have about 20."—Harold J. Ecker, Dir., Institute of Ag. Technology, Michigan State U.

Minnesota: "We could place many more graduates in farm implement dealerships. Many are taken into military service and others go on to get more training. I feel that the farm machinery industry is good and we should encourage as many young people as possible to take training for it."—Elmer Mickelsen, Instructor, Staples Area Vo-Tech. School.

"Ours is a new program. If the student is able to graduate under our requirements, he should have a foreman's ability. He may need special company schools on some equipment, but should be able to study, write and speak to special advantage."—E. C. Miller, Head, Ag. Engineering Technologists' Program, U. of Minnesota Technical Institute.

Missouri: "Our records indicate that 75-80 per cent of all persons who completed these (MDTA) programs are employed in training-related occupations."—Burl Cummings, State MDTA Supervisor.

Nebraska: "Wages of machinery mechanics will have to increase if they are going to hold trained personnel in this area."—Gerald J. Huntwork, Asst. Supervisor, U. of Nebraska School of Technical Agriculture.

North Carolina: "About 90 per cent-plus have been employed by the farm equipment industry."—Darrell A. Miller, Dir., Ag. Institute, North Carolina U. (Raleigh).

"We are already receiving requests for our graduates of the class of 1969. Our college just opened this year and we will not have any graduates until 1968-69."—Harold D. Simpson, Head, Agricultural and Biological Education, Wilkes Community College.

Ohio: "Jobs are available with farm equipment dealers. Many graduates (of the Wooster program) in the past have gone into related mechanical jobs where employers pay higher wages. Farm equipment dealers generally would do well to review their wage structure and to provide experience incentive increases."—Charles R. Curtin, Chief, Man-

power Development, Bureau of Unemployment Compensation.

Pennsylvania: "About 50 per cent of the graduates are employed in farm and light industrial equipment. The low salaries paid by the local equipment dealers are a factor in advising and counseling prospective enrollees in the program. Furthermore, the dealer does not want to employ graduates (or on-the-job trainees) until after May 15 or 20, because he wants to know the type of year he will have before committing himself to hiring students. The salaries are gradually improving."—Dr. Fred C. Snyder,

Dir. of Short Courses, Pennsylvania State U.

Wisconsin: "We expect 50 per cent to be placed in dealerships. The others will stay on the farm or enter the armed services. The only reason for some not going to the dealers is wage rates. However, this is improving."—James W. Zeppelin, Ag. Mechanics Supervisor, Marathon County Technical Institute.

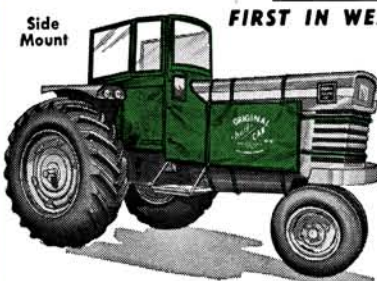
If dealers get less than perfect marks from some of the educators as to how well they are attracting and keeping the graduates, it's only fair to note that no dealers were contacted

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FIRST IN WEATHER-PROTECTION

Side Mount



Original gives the **BIG VIEW** of front area, including wheels. With **EXTRA WARMTH** for cold hours, plus **HEAT RELIEF** from mid-day heat. All adjustments are made without taking cab off.



Genuine Side Mount cabs for side mount tractors. Large, patented "SNAP-OPENING" windshield, with wider, higher sides running back far enough to give **UNMATCHED Side Protection**.

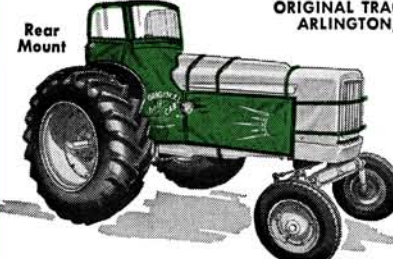


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.....with ORIGINAL!

Check the farms and you'll note the big preference for ORIGINAL. Farmers know that ORIGINAL products are their best buy! What is their best buy is your best to sell because the overwhelming market demand makes it easier to sell ORIGINAL Cabs. You have better quality to offer . . . more practical features . . . and the best dollar value of all! **YOU'LL MAKE MORE MONEY!** And you can fit more tractor models with fewer cab models, too, because ORIGINAL Cabs fit hundreds and hundreds of tractors. Just think what this means to you in smaller inventory and less investment and you'll have another good reason why you'll do better selling ORIGINALS!

ORIGINAL TRACTOR CAB CO., INC.
ARLINGTON, INDIANA 46104

Rear Mount



Side Mount



SUPERIOR REAR MOUNT cabs feature exclusive "LAY-DOWN" WINDSHIELD and COLLAPSIBLE BODY SIDE WINGS

For More Details Circle (58) on Reply Card

for comments about graduates they've hired. Judging from what we've heard over the past few years, the products of a good majority of the programs have worked out well in dealerships, but there have been some sour notes occasionally.

"The first class they sent me," remarked one instructor of an MDTA course for mechanics, "was great. The men wanted to learn and they had aptitude. Dealers snapped them up fast. But look at this bunch. Nothing."

Another educator explains: "The recruits for MDTA training are selected by state officials. Most of them

do a good screening job; others are more concerned with perpetuating these programs than making them work, so they can only be counted on to deliver a certain number of warm bodies."

Despite such difficulties, it appears that an ever-increasing segment of the industry's new shop men are going to enter through the school route. And it's possible that, despite what the draft has been taking from the ranks of recent graduates, the numbers of veterans who are in a position to use their GI education benefits will soon begin influencing the supply. □

'... A more precise match of power to operating needs ...'

HYDROSTATIC 656

(starts on page 32)

mensions are virtually the same. So the major differences between tractors are concentrated in this part of the tractor.

Both the standard and hydrostatic tractors deliver 65-pto and 54-drawbar horsepower, but at rated engine speeds of 1800 and 2300 rpm respectively.

The universal market concept has three dimensions: 1. A strong demand for 60- to 69-hp tractors. 2. Uniform geographical distribution of middle-weight tractors. 3. The diverse uses made of this size unit.

Based on retail sales, the 60 to 69 hp group is the second most popular power class of farm tractors. Non-farm sales are also high, and growing fast, in this category, IH says.

Middleweight tractors are the major power units on smaller farms, and are secondary units on larger farms. So this size of tractor is used for heavy and light work, plus many general purpose jobs—all usually requiring a lot of gear shifting.

The advantages of a hydrostatic transmission include infinite selection of speeds, smooth speed changes, built-in creeper, built-in braking, fast reversing, fewer working parts . . . but it all adds up to a more precise match of power to operating needs—or higher productivity.

Fuel consumption is slightly higher with the hydrostatic transmission than with conventional gear units. In fact, efficiency is a chief reason that IH engineers stopped short of a full-fledged hydrostatic drive. The HT-340 research tractor used instead an engine-driven pump to power low-speed, high-torque motors driving from within the rear wheels.

The variation in fuel use with the 656 hydrostatic tractor has ranged from minus 20 to plus 22 per cent, compared to conventional units. The new drive may use less fuel under special conditions, but it generally takes more. So increased fuel use must be matched against the higher versatility and productivity of the new design.

Perfecting the controls was one of the toughest problems faced by engineers in developing the hydrostatic transmission. Early versions re-

(Continued on page 58)

There's a BULLDOG Jack for Every Application

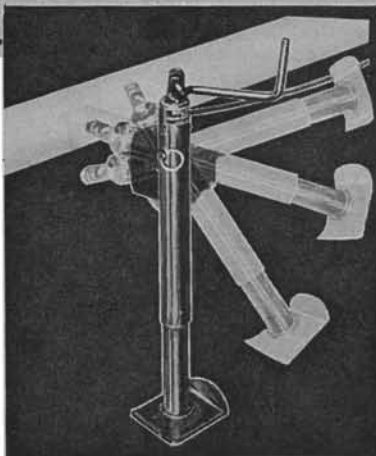


HAMMER BLOW

The Most VERSATILE Jack on the Market

Safety-Engineered Hammer Blow - BULL DOG Jacks are available in a wide range of rugged, trouble-free models — both GEAR-type and SCREW-type. For parking and coupling and uncoupling heavy farm and industrial equipment and travel trailers, they have no equal. And, because of their versatility in mounting and ease of operation, they are used in a multitude of applications as mechanical rams or cylinders and metering devices.

Get the facts on the best jacks in the field . . . write for Hammer Blow - Bull Dog Jack Bulletin No. 5 TODAY!



NEW SWIVEL JACK

Simply pull spring-loaded, sure-lock pin and jack swivels 90° from vertical to horizontal. It locks parallel to tongue for maximum ground clearance and eliminates any interference with power-take-off.

HAMMER BLOW

1013 1st Street Wausau, Wis. 54401

TORQ-LESS AXLES • BULL DOG COUPLERS, JACKS and BRAKE ACTUATORS

BRANCHES:

SOUTHEAST WAREHOUSES, INC.
P.O. BOX 518
FORSYTH, GEORGIA 31029

WAREHOUSES, INC.
1112 N.E. 29TH ST. P.O. BOX 9530
FORT WORTH, TEXAS 76107

R. H. SCALES CO.
121 BROOKLINE AVE.
BOSTON, MASS. 02215

For More Details Circle (59) on Reply Card

Two solid reasons why

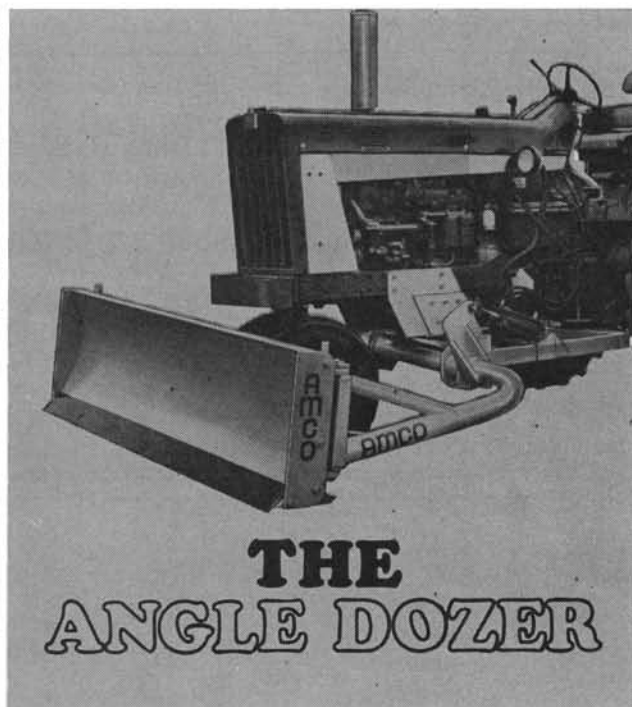
AMCO

**is making a name for itself
in the Cornbelt...**



**THE
UNI-VATOR**

Minimum tillage cultivator for: strip-till; till and plant; band incorporation; broadcast incorporation; cultivation of 20", 30", 38" and 40" rows; available in 2-, 4-, and 6-row models.



**THE
ANGLE DOZER**

Adjustable blade for tilt, angle, or straight-ahead dozing; 8' cutting width, hydraulic lift; reversible cutting edge; removable side plates; fits most tricycle or adjustable front-axle tractors.

AMCO is a new name to most farmers and dealers in the Mid-West, but it's catching on fast. Two big reasons are the labor-saving UNI-VATOR and the job-adjusting ANGLE-DOZER. So far, most of our advertising and promotion has centered around these two implements, and requests for additional information are pouring in.

The name will get bigger—because the job has just started. We've yet to publicize and promote the long line of rugged AMCO disc harrows, and other AMCO tillage tools—famous for many years in the South and Southeast. But, we're on the way. Watch for us!

Better yet, write or call for more information about the UNI-VATOR or ANGLE-DOZER—or the complete line of fine AMCO equipment.

Amco

No. 1 AMCO Drive
Yazoo City, Miss. 39194

- ☐ Send more information on the UNI-VATOR
- ☐ Send more information on the ANGLE-DOZER
- ☐ Send complete information on the AMCO line, and have a manufacturer's representative contact me about dealership information.

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

IT

For More Details Circle (60) on Reply Card

656 GOES HYDROSTATIC

(Continued from page 56)

sponded instantaneously to any movement of the control lever. This meant jerky starting and stopping, especially when the control lever was moved very much. Also the wheels would spin when the tractor was quickly shifted from forward into reverse, or vice versa.

These problems are largely eliminated by intricate circuitry that provides controlled acceleration and deceleration. This delays slightly the response to full movement of the control lever, either forward or reverse. Thus loads are "picked up" more smoothly.

The control quadrant once had straight-through lever action from maximum reverse to maximum forward. Now the quadrant has a cross-wise neutral slot, causing a slight delay as the lever is moved through neutral.

The hydrostatic transmission costs about \$800 more than a basic gear transmission.

Other equipment in the IH line with hydrostatic drives: Four combines, a self-propelled windrower and a 12 hp compact tractor.

For more on tractor transmissions, particularly hydrostatic units, see I&T's series of articles in the Dec. 7 and 21, 1966, issues. □

Kohler Alters Rates For Warranty Work

Kohler Co., Kohler, Wis., a manufacturer of air-cooled engines from 4-hp to 24-hp, has announced a new warranty labor allowance based on a percentage instead of a flat dollar rate.

Under the new formula, Kohler Co. reimburses its service organization in the amount of 75 per cent of the customer labor rate, up to a maximum allowance of \$6 an hour net, according to E. L. Fisher, service manager.

Kohler Co.'s warranty labor allowance previously was a flat \$3 an hour.

Erle E. Ukkelberg Moves To Deere Baltimore Branch

Erle E. Ukkelberg has been named general sales manager of the John Deere Co. branch at Baltimore, Md. He had been general sales manager at the Syracuse, N.Y. branch since February, 1966.

Ukkelberg joined Deere & Co. in 1956 and has worked as a sales trainee, retail store salesman, dealership manager, territory manager, di-

vision sales manager and general sales manager.

James E. Hildebrand replaces Ukkelberg at Syracuse. He had been a division sales manager since 1947.

Also at Deere of Syracuse, Raymond E. Gregg, Jr. has been named a division manager; he had been retail credit manager. George Drescher, who was industrial division sales manager, moves to a like position at Deere's Columbus, Ohio branch.



Move your mowing out of the one-horse era!

Today's mower operator couldn't live on the wages of the horse-drawn era. His standard of living requires that he use a high performance mowing unit.

Superior's All-Hydraulic Mower has brought the old-fashioned sickle bar mower out of the dark ages. It not only is completely hydraulic in operation, but adds a new hydraulic breakaway feature, controlled through the curb lift cylinder, that lets the operator return the cutter bar to position after hitting an object, without leaving the tractor seat.

Special bonus: Superior's exclusive "dual-action" (both blade and shear guard are in motion), eliminates plugging, doubles the number of strokes per minute, lets you start earlier, cut faster and longer.

Then there's the price. That's another bonus. Why not call (312) 652-9132, and find out why. See it in action... under actual field conditions!



SUPERIOR EQUIPMENT

Division of Superior Pipe Specialties Co.

2917 S. Cicero Ave. • Box 50191 • Cicero, Ill. 60650

For More Details Circle (61) on Reply Card

Every Pick-up Owner Is A Prospect for

RIG-A-TOW

PICK-UP TOW BAR

Suggested retail only \$19.95

Bolts quickly to any bumper. Positive vertical lock holds tow bar out of way when not in use. Rugged, Durable. Formed from heavy square steel tubing. Freight prepaid on 5 or more units; volume discounts, too! ORDER TODAY.

"Another volume item with good profits" from **AG-TRONIC, INC.**

P.O. Box 36 Hastings, Nebraska 68901

For More Details Circle (62) on Reply Card

"AUSHERMAN" PATENTED DESIGN rasp cylinder bars will harvest all crops better than regular bars. Been proven on thousands of acres by Custom Harvesters and farmers. Write for circular and price sheet. Agents wanted. Ausherman Manufacturing Company, Belleville, Kansas 66935.

For More Details Circle (63) on Reply Card

IMPLEMENT & TRACTOR

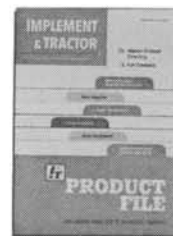
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HAND WINCH

Ideal for loading trucks, hand derricks, loading implements on trailers, moving heavy machinery, etc.



Steel thruout, bronzed bushed. Holds 100 ft. ¼ inch wire rope. Portable, can be bolted anywhere in any position. Often replaces expensive power winches.

3 SIZES
¼ to 1½ Ton
Capacity

Costs less than
you think.

See Your Jobber or Write for Free Literature
GOLD FOUNDRY & MACHINE WKS.
1612 SOUTH OSAGE P. O. BOX 410
INDEPENDENCE, MO. 64051
For More Details Circle (64) on Reply Card



KEY STOCK
12" lengths
Size
Stamped
into metal.
Try your
Jobber
Write for
Catalog.

REIN LEITZKE, INC. • Hustisford, Wis.
For More Details Circle (65) on Reply Card

U.S. DEALERS WANTED

New! X-O KLEEN GUN

all purpose equipment cleaner sells for only \$89.50*

*Suggested retail price
SUBSTANTIAL DEALER
DISCOUNTS AVAILABLE

- Exhaust operated from any tractor or vehicle.
- Cleans by high pressure vapor.
- Ideal for cleaning motors, clogged radiators, machinery ... removing dirt from crawler tracks and undercarriages ... cleaning seeders, fertilizers and dust from equipment ... drying wet surfaces ... spraying disinfectants, whitewashing ... heating manifolds for cold weather starting ... many other uses.
- No moving parts.
- Flame-hardened threads.
- Chromed for long life.
- Stainless steel asbestos-packed flexible hose.
- Heavy duty neoprene suction hose.
- Rust-proof and corrosion-free.
- Exported to 10 countries.
- Fully guaranteed against factory defects.



X-O FLAMER
ATTACHMENT 2' to 12' flame.
350,000 B.T.U. 1200°F.

To WESGAR INDUSTRIES LTD.
110 Fell Ave., North Vancouver, B.C.,
Canada, Phone 987-0922

I am interested in a protected territory dealership for the X-O Klean Gun. Please send full details without obligation.

NAME.....
COMPANY.....
ADDRESS.....
CITY.....STATE.....

For More Details Circle (66) on Reply Card

classified

Advertising rates in the Classified Section are ten cents per word, each insertion, and must be accompanied by the cash to insure publication. Each initial or abbreviation counts a full word.

Also, ads on which replies are sent to us for forwarding require 70c additional to cover department number, etc., which is printed in the advertising copy.

The classified columns are not open to the advertising of any farm equipment regularly produced by manufacturers unless the equipment is used or surplus stock and no longer owned by the manufacturer.

AUCTIONS—Used Farm Equipment

ALABAMA, Dothan (Houston County) located on the Montgomery highway. Established in 1952. It has improved and expanded facilities and now holds sales twice a month. It is second in size determined by number of units moved. Annually this firm sells between 2,500 and 3,500 used farm tractors and 12,000 pieces of equipment. Its deep south location makes it a bellwether for what's ahead in used machinery market each year. Sales second and fourth Tuesdays each month except June and July. Phone SY 2-4314, SY 2-4914. JONES FARM EQUIPMENT CO. 10-7 tf

CALIFORNIA—Bakersfield—Sales Oct. 29, Nov. 19. Sales held weekly December thru April. For descriptive brochures write RUSS ALLEN AUCTIONS, Box 296, Bakersfield, California. 10-21-tf

INDIANA, Stilesville, 25 Mi. West of Indianapolis on US 40. Fast growing—Good market. Sales 1st & 3rd Wednesday each month. Jim Vaughn, STILESVILLE IMPLEMENT AUCTION INC.—Amo 845-2514. 10-7 tf

INDIANA, Vincennes, Don't Consign—Bring the CUSTOMERS to YOUR lot! Use our complete AUCTION service for liquidations, annual inventory reduction sales. We advertise, mail sale bills, furnish mobile Auction Block, mobile office, Auctioneers, ringmen, clerk, and cashier. We accept all checks and monies, pay YOU with OUR check. Let us refer you to those we have sold for. We cover the Midwest. Send for Free brochure. D. D. MEYER REALTY & AUCTION COMPANY, Box 744, Phone Collect 812-882-0118. 10-7 tf

IOWA, Chariton. Chariton Farm Machinery Auction offers a good market for most types of farm equipment. Sales held 3rd Friday each month. Chariton Farm Machinery Auction, Chariton, Iowa. Phone 515-774-4615. 3-7-tf

PLANNING AN AUCTION? Retiring? Liquidation? Reducing inventory? Turn your equipment into CASH with a HALE BROS. AUCTION SALE. We offer a complete Auction Service. Contact us for information. HALE BROS.—The AUCTIONEERS, Bob Hale, Sikeston, Mo. GR 1-1060. Dave Hale, Cape Girardeau, Mo. ED 4-3124. 2-21-tf

MISSOURI, Mexico, Snell Auction Co. offers a good market for all types of farm machinery. Sale held 1st Friday each month year around. Snell Auction Company, Mexico, Missouri, Phone: JU 1-2387. tf

MISSOURI, Sikeston, Hy 60 East. New facilities. An active market for both buyers and sellers. Sale held first and third Wednesdays each month September through April, first Wednesday only May through August. Hale Auction Company, Sikeston, Missouri. GR 1-1060. tf

MISSOURI, Sikeston, Brewer Implement Company. Auction for all types of Farm Machinery. First and Third Tuesday October thru April. First Tuesday only May thru September. Highway 62 East at City Limits. For information call Hayward Brewer. Day Phone GR 1-9541—Night Phone 314 GR 1-0035. 4-7-12t

AUCTIONS—(Cont.)

NORTH CAROLINA, Charlotte. Established in 1953. Normally sell around 4,000 tractors and 10,000 implements annually. Excellent plane, bus and train service. Sale 4th Friday of each month. Ideally located to serve the southeast. GODLEY TWINE & SUPPLY COMPANY. tf

OHIO, Archbold (43502). World's largest farm machinery auction with strong demand for clean, late models. Sales: 2nd, 4th Monday & Tuesday, Jan.-May; 2nd, 4th Tuesday, June-Dec. Turn your slow-moving inventory into cash, bring home a load of saleable items. Thinking of a reduction or close-out sale? Contact us for complete auction terms, regardless of your location. Located on Ohio Rt. 2, 30 mi. west Toledo airport. YODER & FREY, INC. Phone 419/445-2080.

SOUTH DAKOTA, Brandon, 10 miles East of Sioux Falls, Junction Hwy. 16 & 11 & I-90. Sales every third Saturday January through December. Consignment sale, all types new and used. We have many dealer consignments from all over the Midwest. Large buyers from Kansas, Nebraska, Iowa, Minnesota, North Dakota and South Dakota attending these sales. All tractors sold inside in bad weather. Active market for both buyers and sellers. We cover the entire Midwest. DAKOTA MACHINERY AUCTION, INC., Brandon, S. Dakota, Box 438. Phone 582-3222. 1-7-tf

TEXAS, Seymour (Baylor County: Zip 76380). Sales 1st Thursday each month. Private sales daily, retail & wholesale. Largest stock of used equipment in southwest. MONTGOMERY TRACTOR CO. Ph.: 888-3437, area code 817. tf

WISCONSIN, Richland Center: Established 1953. Excellent facilities, fenced graveled yard. Sales held year around second & fourth Friday each month. Koch Tractor Inc., Phone Midway 7-2136. tf

FOR SALE

TRACTOR PARTS—Savings to 75% on new-used-rebuilt parts for 250 makes and models! Wheel, crawler tractors. "Write for immediate money saving price quotation."

SURPLUS TRACTOR PARTS CORP., FARGO, N. D.

Cylinder Head Exchange. Guaranteed used and factory rebuilt cylinder heads for tractors and trucks. Over 100 heads in stock for quick exchange. Send us your cracked heads for rebuilding. Save 50 percent and more. All work guaranteed. Patmon Salvage Yard, Hoxie, Kansas 67740. 2-21-14t

New Surplus Equipment. 12 New John Deere 4 & 6 Row Front Mounted Corn & Cotton Cultivators. 4 New John Deere Model 414 Rotary Hoes. Call or write for low Delivery Prices. Fresno Equipment Co. 2892 East Jensen, Fresno, Calif. 268-8071. 4-21-4t

Good used parts for tractors, trucks, combines and motor graders. Try us first. Patmon Salvage Yard, Hoxie, Kansas 67740. 100 Acres of pipe, steel and parts. 2-21-10t

USED TRACTOR PARTS AT REALISTIC PRICES: One of the most varied stocks available for immediate shipment. For prompt quotations and prompt shipments call Robert Richmond, Mgr., Koch Tractor Inc., Richland Center, Wisconsin, PH 608-647 2136. 6-7 tf

We can furnish 8N & 9N Fords either for parts or resale condition at very competitive prices. Koch Tractor Inc., Richland Center, Wisconsin PH 608 647 2136. 6-7 tf

1961 Chev. Tilt Cab with 21 ft. tilt bed, 1967 White Trend with 21 ft. Thrift Master Schwartz Bed—New, Fremont Implement, Fremont, Ohio. 322-3401. 6-7 2t

A & W TRU TEST Dynanometer 535 rhm, 100 hp, 1000 rpm, 150 hp good condition for \$275. Western Hardware & Supply Co., Leoti, Kansas. Phone: FR 5-2228. 6-7 2t

ITALIAN MANUFACTURERS

Diesel injectors for Caterpillar, International, Allis-Chalmers, Case, American Bosch, G.M., CAV seek agents, importers. Write: DISITAL, Via Lessona 13, TORINO (Italy)

FOR SALE—(Cont.)

SURPLUS INVENTORY: 800 New IHC 2 way Hydraulic Loader Cylinders, IHC #653038R911. Will sell all or part, Robert Richmond, Parts Mgr., Koch Tractor Inc., Richland Center, Wisc. PH 608-647 2136. 6-7 2t

TEN ACRES of used farm machinery for parts. Reasonably priced. WENGERS FARM MACHINERY INC., S. Race St., Myers-town, Pa. 17067. Phone: Area Code 717-866-2138. 6-21-tf

WANTED

Wanted: Allis round balers. Price, describe. Alfred Roeder, Seneca, Kans. 1-21-e.o.i.-6t

Wanted—Wrecked or burned NAA Fords and other late Model Tractors, also trucks. Patmon Salvage Yard, Hoxie, Kansas. 4-21-10t

HELP WANTED

SALES REPRESENTATIVE WANTED—The Lely Corporation has an opening for an alert young man interested in a sales career selling farm equipment to dealers in rapidly expanding market. Good chance for advancement. Salary, commission, expenses, and a company car furnished. Experience in selling farm equipment is required. Knowledge of territory essential. Sales territory covers Georgia and Alabama. Will sell patented line of fertilizer spreaders, seeders, hay racks, liquid manure spreaders, rotary cultivators and will introduce new products. We require for this position a man with an excellent knowledge of farm equipment who is able to set up demonstrations, and who has proficient knowledge of the applications under various conditions. Send Resume to: General Manager, Lely Corporation, Dept. TX, Lincoln, Delaware. 6-21-1t

EXPO 67 ACCOMMODATION

I.H.C. dealer in Montreal area has 2 rooms available in private home 30 minutes from EXPO sites. Contact: Claude Dubois, P. O. Box 307, Ville St-Remi, P.Q. Canada. 6-21-1t

Livestock Data Analysis Offered by Ad Firm

An analysis of livestock and poultry populations, broken down by state and county, has been compiled by Fletcher and Associates Advertising, Inc., 1500 Brookside Dr., St. Joseph, Mo.

The livestock census, based on 1964 USDA census figures, gives livestock and poultry populations and sales activity on a county-by-county basis. The statistical data includes, by county: the total number of feedlot cattle sold; cattle, milk cows and calves on farms; hogs, chickens and broilers sold, and chickens four months and older on the farm.

IMPLEMENT & TRACTOR

Subscription Application

☐ ENTER ☐ RENEW
MY SUBSCRIPTION

(Please check all blocks which apply to you)

Send IMPLEMENT & TRACTOR twice monthly . . .
plus the annual RED BOOK and I&T PRODUCT FILE
issues at no extra charge.

I prefer: ☐ 2 years for \$5 ☐ 1 year for \$3
In Canada and Foreign Countries: 2 years \$7; 1 year \$4

Name.....

Title.....

Firm Name.....

Street Address.....

City.....

State.....Zip Code.....

☐ Bill Me ☐ Bill Company ☐ Check Enclosed

☐ Dealer or Employee ☐ Independent Tractor Shop

☐ Manufacturer or Employee ☐ Farm Manager,
Government Agency,
☐ Wholesale Distributor Experiment Station,
Employee School or College

Tractor(s) Handled.....

FIRST CLASS
PERMIT NO. 441
KANSAS CITY, MO.

BUSINESS REPLY MAIL
No Postage Stamp Necessary if Mailed in the United States

POSTAGE WILL BE PAID BY

IMPLEMENT & TRACTOR

1014 WYANDOTTE STREET
KANSAS CITY, MISSOURI 64105

CIRCULATION DEPARTMENT

Practical in design

Maybe it's a baler plunger that's completely roller-mounted. Or an extra access door for easier servicing. Or the built-in knife sharpener you see on this forage harvester. Engineered into every New Holland machine are features farmers want—and buy!

Dependable in action

This is the payoff—hard days, long seasons, year-after-year service. On this score, New Holland takes a back seat to nobody! Reliability builds farmer loyalty. Loyalty builds your sales.



Profitable to sell

There's one big reason you're in business, and New Holland knows it. That's why we make the kind of hard-working equipment that brings farmers back to you for more. And we back up our products with a "promotion package" that

includes plenty of full-color advertising, posters, display materials and special incentive programs. It all helps explain why New Holland dealers everywhere are discovering how really large a share of their net profit comes from the New Holland line!

Balers • Bale-Throwers • Mowers • Conditioners • Rakes • Mower-Conditioners • Rotary Mowers • Windrowers • Automatic Bale Wagons • Stack Retrievers • Bale Carriers
Combines • Grinder-Mixers • Forage Harvesters • Forage Blowers • Forage Boxes • Manure Spreaders • Farm Wagons • Fertilizer Distributors • Bale Twine and Wire



NEW HOLLAND
Practical in design • dependable in action

For More Details Circle (2) on Reply Card

CUT DOWN SLACK SALES PERIODS WITH A YEAR-ROUND OWATONNA FRANCHISE

Like to keep your sales at a high, profitable level all months of the year? Take the valleys out of your sales curve with an Owatonna franchise; leave the peaks in!

The chart below shows the pattern of peak sales on different machinery classifications as defined

by a Farm & Power Equipment survey. As you can see there's no off-season for Owatonna franchise holders. With the Owatonna line you complement sales periods. As one peak wanes another comes along to pick things up.

BEST EQUIPMENT SALES PERIODS

MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.
FORAGE WINDROWERS											
					FORAGE BLOWERS						
						ELEVATORS					
							MIXER & MILLS				
		HAY CONVEYORS									
		GRAIN SWATHERS									

With an Owatonna franchise, you'll be able to sell self-propelled windrowers for grain and forage, pull-type windrowers for forage, mixer & mills, all-purpose elevators, bale elevators and conveyor systems, and forage blowers.

Let us show you how an Owatonna franchise can cut down slack sales periods . . . and help your business grow. Fill out the coupon now.

OWATONNA

OWATONNA MANUFACTURING CO., INC.
Owatonna, Minnesota 55060, Dept. Z-6

I am interested in reducing slack sales periods with an Owatonna franchise.

Name

Firm

Address

City State Zip Code

For More Details Circle (3) on Reply Card